

GoldStar

VHS VIDEO CASSETTE RECORDER
PAL

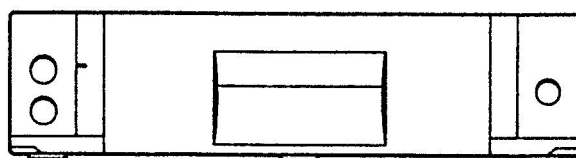
SERVICE MANUAL

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL

NOTE)

The deck mechanism of this VCR is D-17. This section is provided separately. When checking the mechanical problems, refer to the manual (Part No. 494-004K) provided separately.



MODEL : QUISY 40



GoldStar

TABLE OF CONTENTS

SECTION 1 SUMMARY

KEY TO ABBREVIATIONS.....	1-1
IMPORTANT SAFETY PRECAUTIONS	1-2
• Precautions during Servicing	
SAFETY CHECK AFTER SERVICING	1-3
• Insulation resistance test	
• Dielectric strength test	
• Clearance distance	
• Leakage current test	
INTRODUCTION	1-4
FEATURES.....	1-4
SPECIFICATIONS.....	1-4
LOCATION OF CUSTOMER CONTROLS.....	1-5

SECTION 2 CABINET & MAIN FRAME

SERVICE FIXTURE CONNECTING METHOD	2-1
1. SVC FIXTURE Connecting Method.....	2-1
2. Electrical Service Fixture List.....	2-1
CABINET DISASSEMBLY	2-2
1. Top Case, Bottom Cover.....	2-2
2. Front Panel	2-2
CIRCUIT BOARD DISASSEMBLY	2-2
1. Circuit Board Arrangement	2-2
2. Main Circuit Board (I) (Y/C, Audio, Tuner, Syscon, Servo)	2-3
3. Timer Circuit Board	2-3
4. Pre-Amp Circuit Board.....	2-3
5. Power Circuit Board.....	2-3
EXPLODED VIEWS	2-4
1. Cabinet & Main Frame Section.....	2-4
2. Packing Accessory Section	2-5
3. Remote Control Section.....	2-5

SECTION 3 ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES	3-1
1. Servo Circuit	3-1
2. Y/C Circuit.....	3-1
3. Audio Circuit	3-4
BLOCK DIAGRAMS	3-5
1. Power Block Diagram	3-5
2. Main System (Servo, Syscon, Timer) Block Diagram	3-6
3. Y/C & Function OSD Block Diagram	3-8

4. Audio Block Diagram	3-10
5. Pre-Amp Block Diagram	3-11
6. Tuner/IF Block Diagram.....	3-12
7. Premiere, VPS & PDC Block Diagram.....	3-14
CIRCUIT DIAGRAMS.....	3-16
1. Power Circuit Diagram.....	3-16
2. Servo Circuit Diagram.....	3-20
3. Pre-Amp Circuit Diagram.....	3-22
4. Y/C & Function OSD Circuit Diagram	3-28
5. Audio Circuit Diagram.....	3-30
6. System Control Circuit Diagram	3-32
7. Tuner/IF Circuit Diagram.....	3-36
8. Premiere, VPS & PDC Circuit Diagram	3-38
9. Timer Circuit Diagram	3-40
10. Connection Diagram	3-42
DECK JUNCTION	3-44
1. Deck Junction Circuit Diagram	3-44
2. Deck Junction P.C.Board.....	3-44
PRINTED CIRCUIT BOARD DIAGRAMS.....	3-46
1. Main P.C.Board	3-46
2. Premiere P.C.Board	3-47
3. Y/C P.C.Board.....	3-48
4. Power P.C.Board	3-49
5. Pre-Amp P.C.Board	3-50
6. Timer P.C.Board	3-49
7. Junction P.C.Board	3-51

SECTION 4 MECHANISM

NOTE) The table of contents for this section is edited separately.

SECTION 5 REPLACEMENT PARTS LIST

REPLACEMENT PARTS LIST.....	5-1
• Mechanical Section.....	5-1
• Cabinet & Main Frame Section.....	5-4
• Packing Accessory Section	5-5
• Remote Control Section.....	5-5
• Fixture Section.....	5-6
• Electrical Section	5-7

SECTION 1 SUMMARY

KEY TO ABBREVIATIONS

A	AC	Alternating Current	L	L	Low, Left, Coil
	ACC	Automatic Color Control		LD	LED
	ADJ	Adjust		LECHA	Letter Character
	A/E	Audio Erase		LP	Long Play
	AFC	Automatic Frequency Control		LPF	Low Pass Filter
	AFT	Automatic Fine Tuning	M	MAX	Maximum
	AGC	Automatic Gain Control		MD	Modulator
	ALC	Automatic Level Control		MIC	Microphone
	AM	Amplitude Modulation		MIN	Minimum
	AMP	Amplifier		MIX	Mixer, Mixing
	ANT	Antenna		M.M.	Mono Multi Vibrator
	APC	Automatic Phase Control		MMV	Monostable Multivibrator
	ASS'Y	Assembly		MOD	Modulation, Modulator
	AUD	Audio		MODEM	Modulator-Demodulator
	AUTO	Automatic	N	NR	Noise Reduction
	AUX	Auxiliary		OSC	Oscillator
B	B	Base	O	OSD	On Screen Display
	BPF	Bandpass Filter	P	PB	Playback
	BW or B/W	Black and White		PCB	Printed Circuit Board
C	C	Capacitor, Chroma, Collector		PG	Pulse Generator
	CAN	Cancel		PLL	Phase Locked Loop
	CAP	Capstan		P-P	Peak-to-Peak
	CATV	Cable Television		PRE-AMP	Preamplifier
	CBA	Circuit Board Assembly		PS	Phase Shift
	CCD	Charge Coupled Device		PWM	Pulse Width Modulation
	CFG	Capstan Frequency Generator	Q	Q	Transistor
	CH	Channel		QH	Quasi Horizontal
	CHROMA	Chrominance		QSR	Quick Setting Record
	CLK	Clock		QTR	Quick Timer Record
	CNR	Chroma Noise Reduction		QV	Quasi Vertical
	COMB	Comb Filter	R	R	Resistor, Right
	COMP	Comparator		RE(or RC)	Remocon, Receiver
		Composite		REC	Recording
		Compensation		REF	Reference
	CONV	Converter		REG	Regulated, Regulator
	CS	Chip Select		REMOCON	Remote Control(unit)
	CST	Cassette		REV	Reverse
	CTL	Control		REW	Rewind
	CUR	Current		RF	Radio Frequency
	CYL	Cylinder		R/P	Record/Playback
				RTC	Real Time Counter
D	D	Drum, Digital, Diode, Drain	S	S	Serial
	dB	Decibel		SH	Shift
	DC	Direct Current		SHARP	Sharpness
	DEMOD	Demodulator		SIF	Sound Intermediate Frequency
	DET	Detector		SLO	Side Locking
	DEV	Deviation		S/N	Signal to Noise Ratio
	DHP	Double High Pass		SP	Standard Play
	DIGITRON	Digital Display Tube		SUB	Subtract, Subcarrier
	DL	Delay Line		SW or S/W	Switch
	DOC	Drop Out Compensator		SYNC	Synchronization
	D/V	Dummy Vertical		SYSCON	System Control
E	E	Emitter	T	T	Coil
	EE	Electric to Electric		TP	Test Point
	EMP	Emphasis		TR	Transistor
	EP	Extended Play		TRK	Tracking
	EQ	Equalizer		TRANS	Transformer
	ES	Electrostatically Sensitive		TU	Tuner, Take-Up
F	F	Fuse	U	UHF	Ultra High Frequency
	FB	Feed Back		UNREG	Unregulated
	FBC	Feed Back Clamp	V	V	Volt, Vertical
	FE	Full Erase		VA	Always Voltage
	FF	Fast Forward		VCO	Voltage Controlled Oscillator
	FL	Frequency Generator		VGC	Voltage Gain Control
	FM	Filter		VHF	Very High Frequency
	F/R	Frequency Modulation		VISS	VHS Index Search
	FS	Front/Rear		VR	Variable Resistor or Volume
	FSC	Frequency Synthesizer		V-Sync	Vertical Synchronization
	F/V	Subcarrier Frequency		VTG	Voltage
	FWD	Frequency Voltage		VV	Voltage to Voltage
		Forward		VXO	Voltage X-tal Oscillator
G	GEN	Generator	W	W	Watt
	GND	Ground		WHT	White
H	H	High, Horizontal		W/O	With Out
	H _z	Hertz	X	X-TAL	Crystal
I	IC	Integrated Circuit	Y	Y/C	Luminance/Chrominance
	IF	Intermediate Frequency		YNR	Luminance Noise Reduction
	INS	Insert	Z	ZD	Zener Diode
	I/O	Input/Output			

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

• Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the Δ symbol and shaded (■) parts are critical for safety. Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use Specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistor

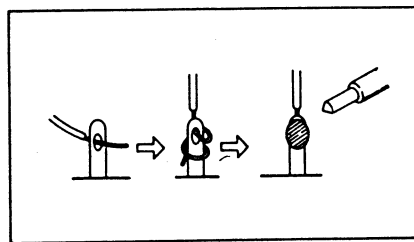


Fig. 1

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.(Fig. 1)

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10-15Kg of force in any direction will not loosen it.(Fig. 2)

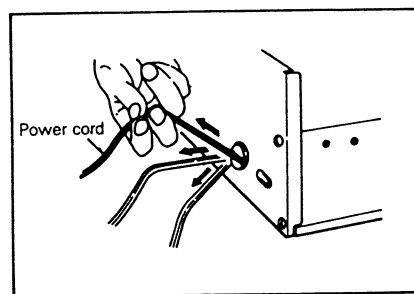


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

• Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

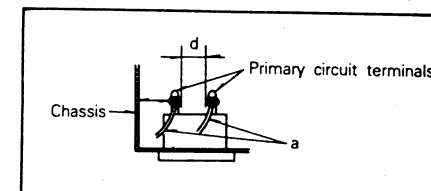


Fig. 3

• Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

Table 1: Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d')
*110 to 130 V 200 to 240 V	Europe Australia	$\geq 10 \text{ M}\Omega / 500 \text{ V DC}$	4kV 1 minute	$\geq 6\text{mm}(d)$ $\geq 8\text{mm}(d')$ (a Power cord)

*Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

• Leakage Current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)

Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

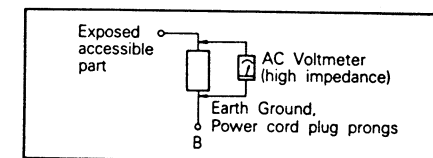


Fig. 4

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current(i)	Earth Ground (B) to:
100 to 130 V	Europe	$2\text{k}\Omega$	$i \leq 0.7\text{mA peak}$ $i \leq 2\text{mA dc}$	Antenna earth terminals
200 to 240 V	Australia	$50\text{k}\Omega$	$i \leq 0.7\text{mA peak}$ $i \leq 2\text{mA dc}$	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INTRODUCTION

This service manual provides a variety of service information. It contains the mechanical structure of the Video Cassette Recorder(VCR) together with mechanical adjustments and the electronic circuits in schematic form.

This VCR was manufactured and assembled under our strict quality control standards and meets or exceeds industry specifications and standards.

FEATURES

- VPS (Video Programming System)
- HQ, High Quality picture enhancement system improves image sharpness and detail
- Full-Function infrared remote control (OSD programming)
- Auto Video Head Cleaner
- 8 event/1 year programmable timer with everyday recording
- QSR, Quick Set Recording with stand-by (up to 9 hours)
- Programmable channel memory with voltage synthesized Tuner (up to 40 positions)
- Double-Azimuth 4-Head system
- ACSS (FUNKUHR : Automatic clock setting system) Function
- ACMS plus (Automatic channel memory system) Function
- Auto Power and Play Function
- Automatic rewind
- Back-up time up to 1 year
- Digital Auto Tracking system
- Quick Start Function
- Real Time Counter
- Center mechanism
- Child Lock Function
- Logic Search Function, Jet Search Function
- LP recording and playback Function
- Monitor Function
- Fine Still, Frame Advance, Variable Slow Function
- Built-in ShowView Programming
- PREMIERE Compatible

- * ShowView is a trademark applied for by Gemstar Development Corp.
- ShowView system is manufactured under license from Gemstar Development Corporation.

SPECIFICATIONS

General :

Power Source :	AC 230V \pm 10%, 50Hz
Power Consumption :	Approx. 33 Watts
Video Recording System :	Double azimuth 4 heads, helical scanning system
Tape Speed :	23.39mm/sec (SP mode) 11.69mm/sec (LP mode)
Tape Format :	Tape Width 1/2" (12.7mm high density tape VHS)
Maximum Recording Time :	4 Hours at SP mode/8 Hours at LP mode (with E-240 tape)
FF/Rewind Time :	Less than 300sec (with E-180 cassette)
Dimensions (W \times H \times D) :	14.2" \times 3.5" \times 13.5" (360 \times 88 \times 342mm)
Weight :	About 11.24 lbs (5.1kg)
Operating Temperature :	41° F - 95° F (5° C - 35° C)
Operating Humidity :	35% - 80%
Timer :	24 hours display type

Video :

Television System :	CCIR standard (625lines, 50 fields)
Recording Format :	PAL/SECAM Colour signal
RF Reception :	PAL/MESECAM
RF OUT	PAL B/G
Input Level :	PAL G
Output Level :	VIDEO IN (SCART-PIN type) 1.0Vp-p 75 ohm unbalanced VIDEO OUT (SCART-PIN type) 1.0Vp-p 75 ohm unbalanced
Signal to Noise Ratio :	More than 43dB
RF Modulator :	UHF Channels 32~40 (Adjustable)

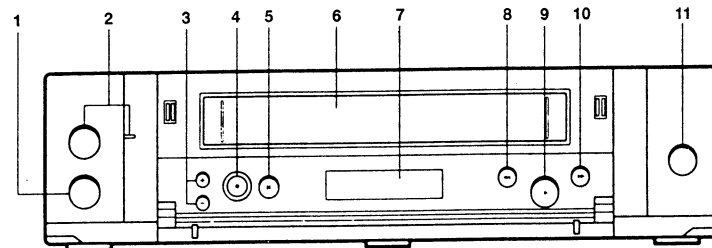
Audio :

Input Level :	AUDIO IN (SCART-PIN type) 0 dBm more than 50 Kohm
Output Level :	AUDIO OUT (SCART-PIN type) 0 dBm Less than 1Kohm
Audio Track :	Monotrack type
Audio Frequency Response :	100Hz-10KHz (±3) at SP mode/100Hz -5kHz (±3) at LP mode
Signal to Noise Ratio :	More than 43dB

*Designs and specifications are subject to change without notice.

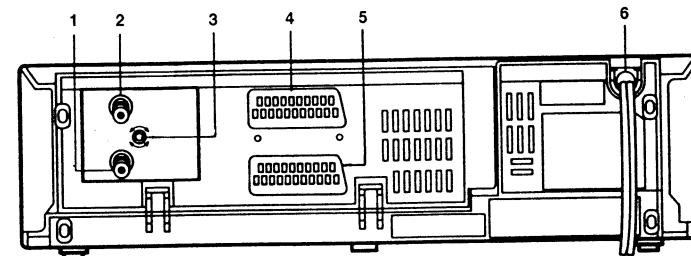
LOCATION OF CUSTOMER CONTROLS

FRONT



- | | |
|-------------------------------------|-----------------------------|
| 1. STOP/EJECT BUTTON | 7. MULTI-FUNCTION DISPLAY |
| 2. POWER BUTTON AND INDICATOR | 8. REWIND/REVIEW BUTTON |
| 3. CHANNEL PROGRAMME SELECTORS(+/-) | 9. PLAY BUTTON |
| 4. RECORD/QSR BUTTON | 10. FAST FORWARD/CUE BUTTON |
| 5. PAUSE/STILL BUTTON | 11. REMOTE SENSOR WINDOW |
| 6. CASSETTE COMPARTMENT | |

REAR

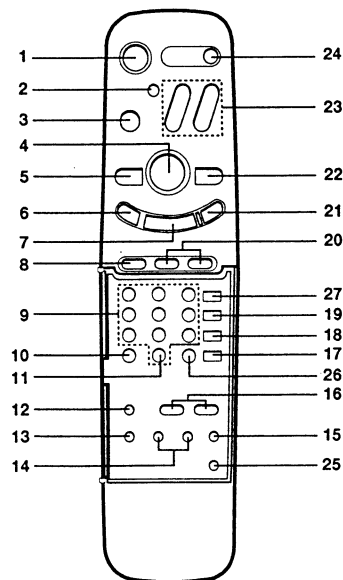


- | | |
|-----------------------|--------------------|
| 1. AERIAL INPUT | 4. EURO-AV SOCKET |
| 2. RF OUTPUT | 5. PREMIERE SOCKET |
| 3. RF CHANNEL CONTROL | 6. MAINS LEAD |

Diagram of the front panel of the VCR with numbered callouts:

- 1: VCR logo
- 2: VCR text
- 3: QSR (Quick Search Repeat) button
- 4: QSR text
- 5: VPS (Video Position Search) button
- 6: VPS text
- 7: VISS (Video Index Search) button
- 8: VISS text
- 9: MARK button
- 10: MARK text
- 11: Play/Pause buttons
- 12: M (Memory) button
- 13: Digital display showing 00:00:00
- 14: SP (Still Play) button
- 15: LP (Long Play) button

- ## REMOTE CONTROL



-
- Diagram illustrating the Main Frame assembly components and their connections:
- MAIN C.B.A.** (Main Control Board Assembly)
 - FIXTURE CABLE ②**
 - FIXTURE CABLE ①**
 - MAIN FRAME**
 - TIMER C.B.A.** (Timer Control Board Assembly)
- Fig. 2-a**

Fig. 2-a

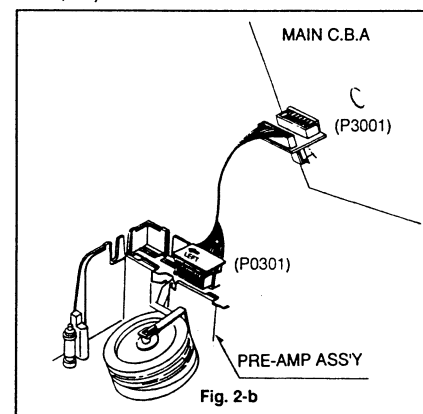


Fig. 2-b

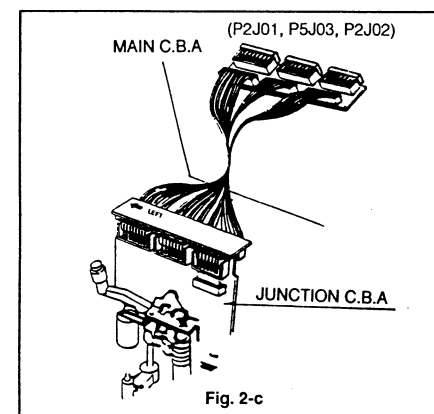
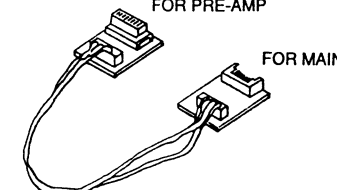


Fig. 2-c

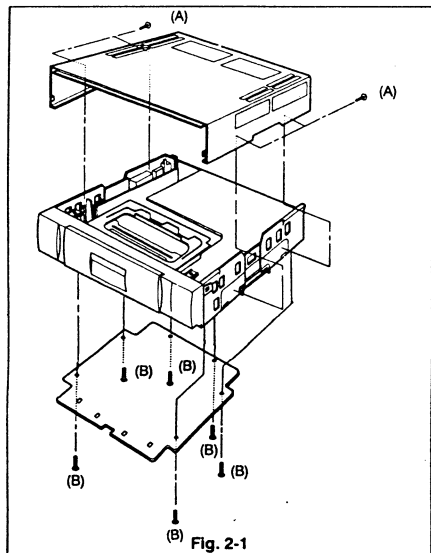
- FOR MAIN



CABINET DISASSEMBLY

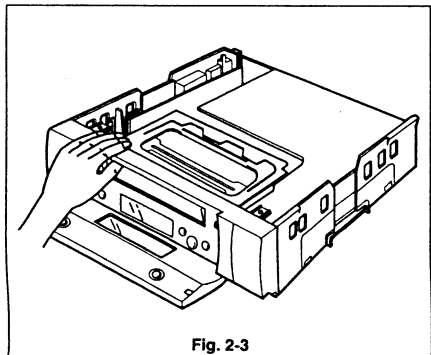
1. Top Case, Bottom Cover

- Release 4 screws (A). (See Fig. 2-1)
- Hold the back of Top Case and lift it up slightly backward to remove it.
- Release 6 screws (B). (See Fig. 2-1)
- Hold the Bottom Cover and pull it slightly forward to remove it.



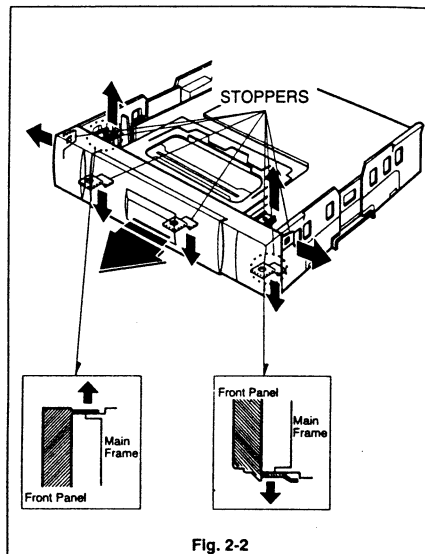
*Caution

When reassemble the Front Panel, assemble it in condition of inserting the Door Cassette inside, as shown in Fig. 2-3.



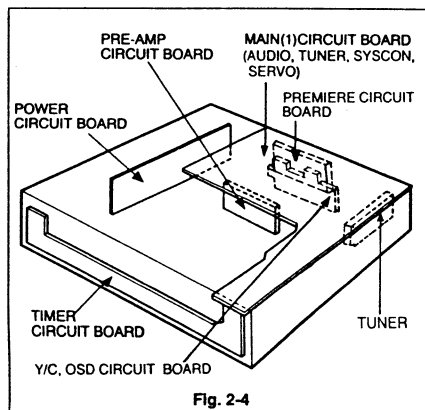
2. Front Panel

- Remove the top Case (See Fig. 2-1).
- Remove the bottom Cover (See Fig 2-1).
- Remove the stoppers on the top of Front Panel.
- Remove the stoppers on the bottom of Front Panel.



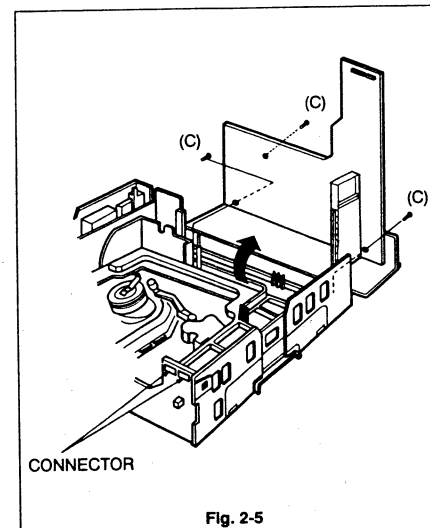
CIRCUIT BOARD DISASSEMBLY

1. Circuit Board Arrangement



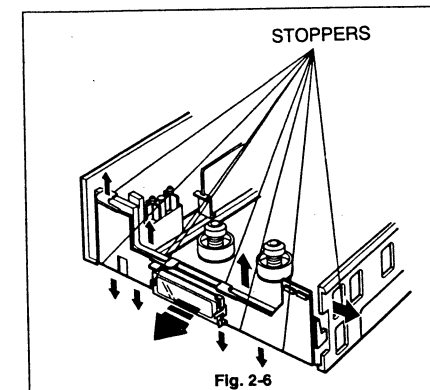
2. Main Circuit Board(I)(Y/C, Audio, Tuner, Syscon, Servo)

- Release 3 screws (C). (See Fig. 2-5)
- Disconnect the connector between Main Circuit Board and Timer Circuit Board.
- Disconnect the connector between Main Circuit Board and Power Circuit Board.
- Lift the rear part up and pull the P.C. Board backward.
- Remove the connector for complete removal.



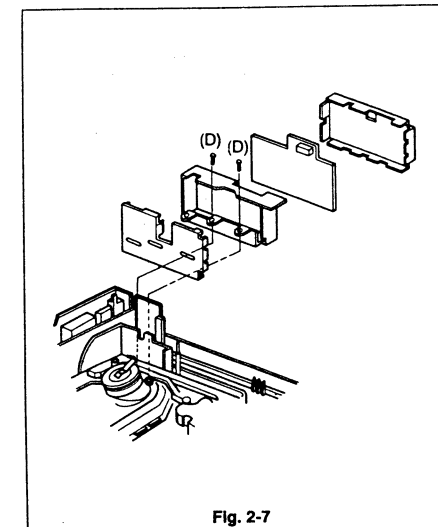
3. Timer Circuit Board

- Pull the P.C. Board toward you while pressing 8 stoppers in the direction of the arrows to disengage, and remove the P.C. Board (See Fig. 2-6).
- Remove the connector for complete removal.



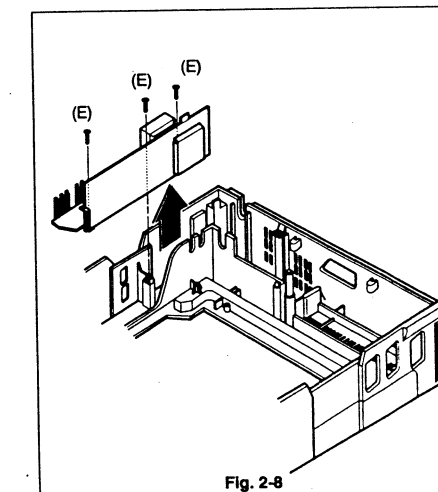
4. Pre-Amp Circuit Board

- Release 2 screw (D) (See Fig. 2-7).
- Remove Pre-Amp Package from Main Frame.
- Remove bracket Pre-Amp from Pre-Amp Package.
- Remove Pre-Amp Circuit Board from Pre-Amp Package.




5. Power Circuit Board

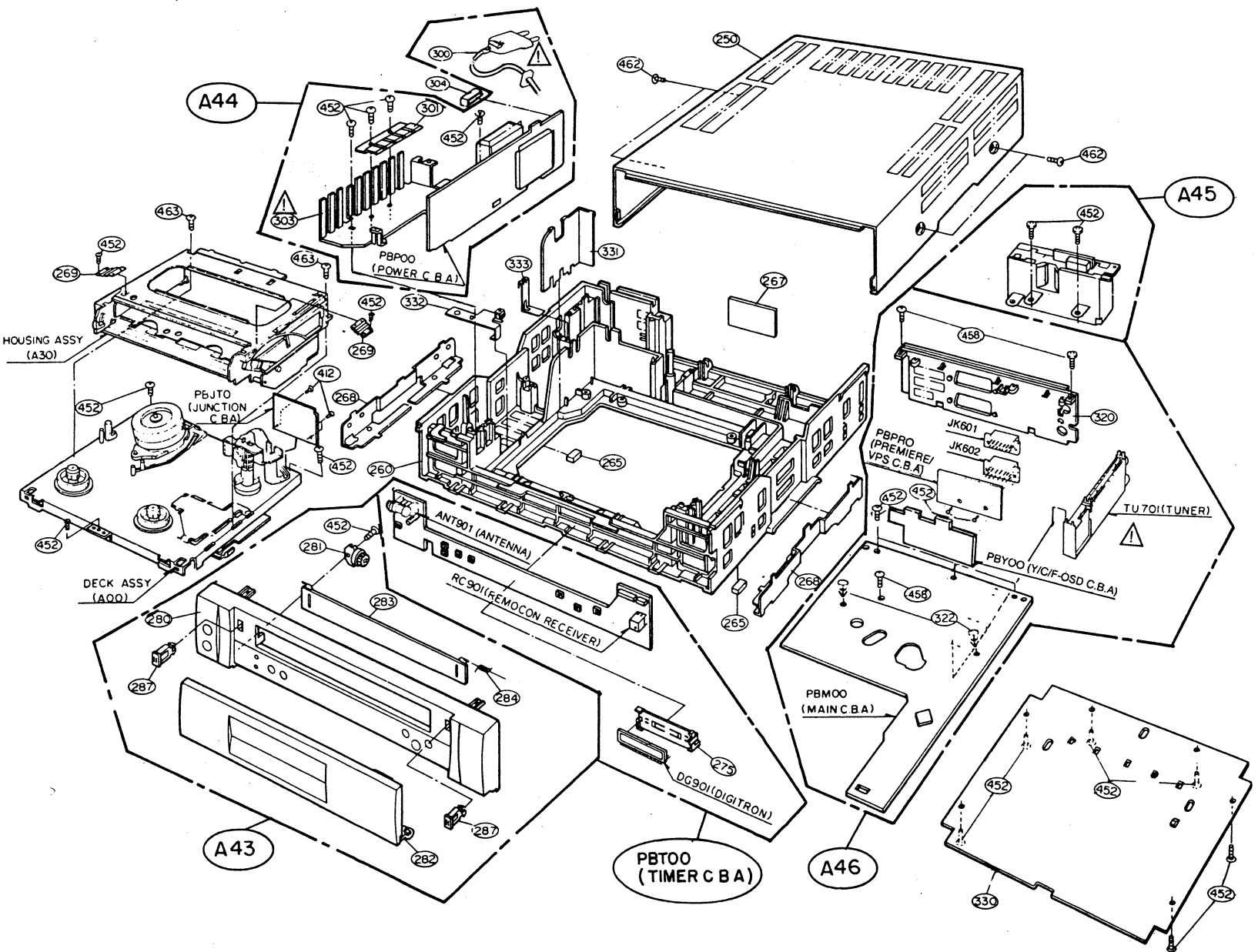
- Remove Main(I) P.C. Board (See Fig. 2-5).
- Release 3 screws (E). (See Fig. 2-8)



EXPLODED VIEWS

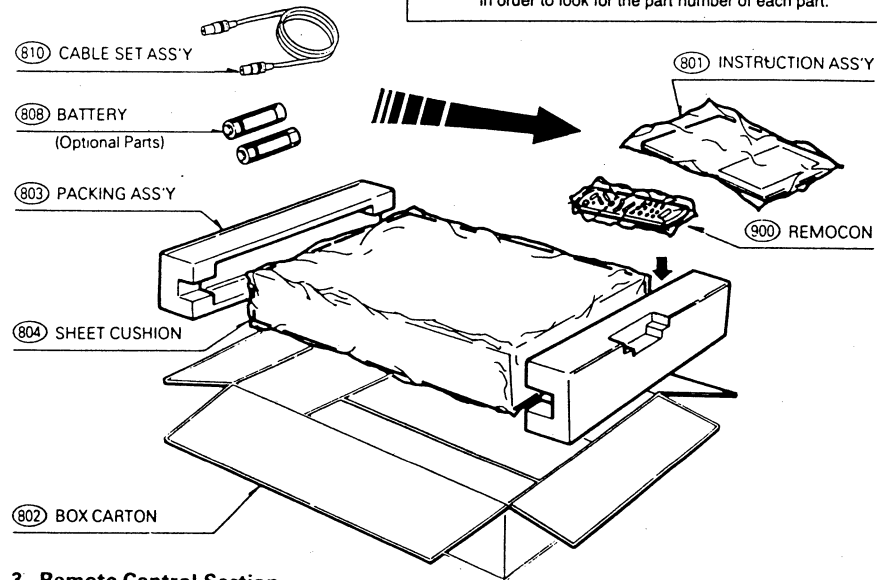
1. Cabinet & Main Frame Section

NOTE 1. Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
2. The components identified by mark  are critical for safety.
Replace only with part number specified.

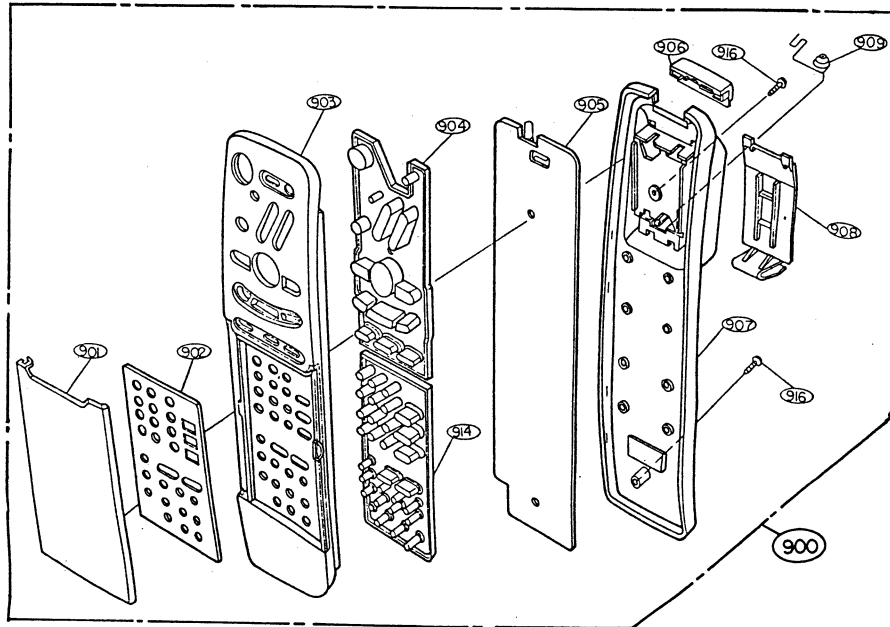


2. Packing Accessory Section

NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



3. Remote Control Section



SECTION 3 ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES

Electronic Test Equipment Requirement :

• Oscilloscope	• Frequency Counter	• Recording Tape
• Video Signal Generator	• Digital Multimeter	
• Modem Tester	• + Driver	
• Level Meter	• Test Tape (SP)	

1. Servo Circuit

1) \pm PG Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	$6.5H \pm 0.5H$ ($416\mu\text{sec}$, $1H=64\mu\text{sec}$)	W255 (H.SW TP) Video Out Terminal	VR201

Purpose :

It is for the phase dividing of the Video A,B heads with 180° and the exact tracing of each track to meet head switching point with VHS spec.

Procedure :

- Playback a PAL / SP test tape.
- Connect CH-1 terminal of oscilloscope to W255 H.SW, and CH-2 terminal to Video out terminal of VCR.
- Trigger the complex Video signal of CH-2 to CH-1 H.SW, and adjust VR201 so that the distance from A(B) head selection point of H.SW signal to the starting point of horizontal synchronized signal is $6.5H$ ($416\mu\text{sec}$, $1H=64\mu\text{sec}$).

Reference)

- \pm PG adjustment is practiced in the state of maximum RF level and locked servo system.
- The deviation between A/B Head adjustment location should be within $\pm 0.5H$ ($32\mu\text{sec}$).
- The deviation between the specification of adjustment and the practical measurement value should be within $\pm 0.5H$ ($32\mu\text{sec}$).
- Oscilloscope and VCR set should be connected with GND.

Waveform

Composite Video Signal

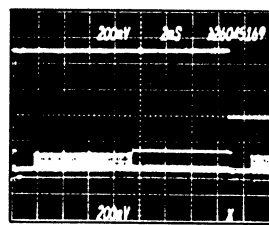


Fig. 3-1

2. Y/C Circuit

1) EE Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	$2 \pm 0.1V_{p-p}$	Video Out TP	VR302 EE Level

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to Video Out TP.
- Adjust VR302 so that the value from the lower part of synchronis to 100% white signal is $2 \pm 0.1V_{p-p}$.

Waveform

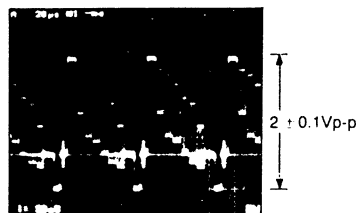


Fig. 3-2

2) FM Carrier Frequency Adjustment

- A. With Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	White Peak: $4.8 \pm 0.05\text{MHz}$ Sync.Tip: $3.8 \pm 0.05\text{MHz}$	IC301 Pin ② (CAR/DEV TP)	VR301

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to modem tester output terminal. (But the set and the modem tester should be connected with 1:1 probe).
- Connect input terminal of modem tester to IC301 pin ②.
- Input the video signal of 100% white to Video Input Jack.
- The terminal position of modem tester is operated to be ATT. 0dB, PAL/SECAM mode, Demod, Marker on.
- Adjust VR301 to right side in left maximum state so that 3.8MHz marker on scope is agreed with the lower part of sync.

Waveform

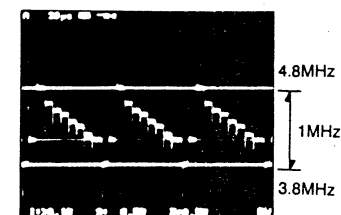


Fig. 3-3

- B. Without Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
E.E mode (without signal)	$3.81 \pm 0.02\text{MHz}$	IC301 Pin ② (CAR/DEV TP)	VR301

Procedure :

- Connect the probe of Frequency Counter to CAR/DEV TP.
- Adjust VR301 so that the Frequency Counter is $3.81 \pm 0.02\text{MHz}$.

3) FM Deviation Frequency Adjustment

- A. With Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Stop	$1 \pm 0.05\text{MHz}$	IC301 Pin ② (CAR/DEV TP)	VR303

Procedure :

- Connect the Video Signal Generator to Video in terminal.
- Connect CH-1 terminal of the oscilloscope to modem tester output terminal. (But the set and the modem tester should be connected with 1:1 probe).
- Connect input terminal of modem tester to IC301 pin ②.
- Input the video signal of 100% white to Video Input Jack.
- The terminal position of modem tester is operated to be ATT. 0dB, PAL/SECAM mode, Demod, Marker on.
- Adjust VR303 to right side in left maximum state so that 4.8MHz marker on scope is agreed with the level of 100% white signal.

Waveform

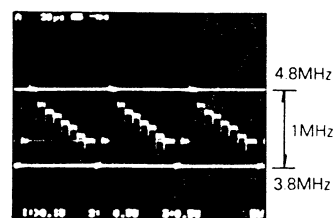


Fig. 3-4

- B. Without Modem Tester

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	$2.0 \pm 0.1 \text{Vp-p}$	Video Out TP	VR303

Procedure :
a. Connect CH-1 terminal of the oscilloscope to Video Out TP.
b. Input the Video Signal of 100% white to Video Input Jack.
c. Adjust VR303 so that the Video Playback Level is $2.0 \pm 0.1 \text{Vp-p}$ after recording.

4) Playback Luminance Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback(SP mode)	$2 \pm 0.1 \text{Vp-p}$	Video Out TP	VR305

Procedure :
a. Connect CH-1 terminal of the oscilloscope to Video Out TP.
b. Playback a PAL SP test tape (with 100% white signal).
c. Adjust VR305 so that the Video waveform is $2 \pm 0.1 \text{Vp-p}$.

Waveform

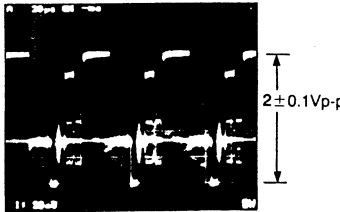


Fig. 3-5

5) Recording Luminance Level Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	$200 \text{mVp-p} \pm 10 \text{mVp-p}$	REC-Y TP	VR304

Procedure :
a. Connect the Video Signal Generator to Video in terminal.
b. Connect CH-1 terminal of the oscilloscope to REC-Y TP.
c. Adjust VR304 so that the luminance FM output is $200 \text{mVp-p} \pm 10 \text{mVp-p}$.

Waveform

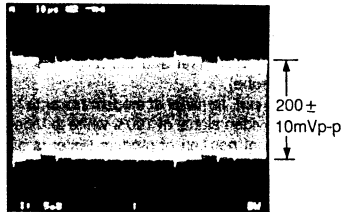


Fig. 3-6

3. Audio Circuit

1) Audio R/P Head Azimuth Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	Maximum	Audio Out Terminal	R/P Head Azimuth

Purpose :
This is for adjusting Audio playback level to specification.

Procedure :
a. Connect the Level Meter to Audio out terminal.
b. Adjust Angle of R/P Head Azimuth so that 1KHZ

output level of Level Meter is maximum after playing the standard tape.
c. At this time, make 6KHz level be maximum to adjust Angle of R/P Head azimuth.

Waveform




Fig. 3-7

2) Record Oscillation Frequency Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	$70 \text{KHz} \pm 5 \text{KHz}$	C403	T401(Oscillation Coil)

Purpose :
This is for adjusting the oscillation frequency to specification in recording.

Procedure :
a. Connect CH-1 terminal of the oscilloscope to C403.
b. Connect the frequency counter to C403.

c. Confirm that the oscillation frequency in recording is $70 \text{KHz} \pm 5 \text{KHz}$.
d. At this time, adjust OSC coil(T401) and make the oscillation frequency fit to $70 \text{KHz} \pm 5 \text{KHz}$.

3) Record Bias Adjustment

MODE	SPECIFICATIONS	MEASUREMENT POINT	ADJUSTMENT POINT
Record	2.6mVRMS	R401 Both Terminal	VR401

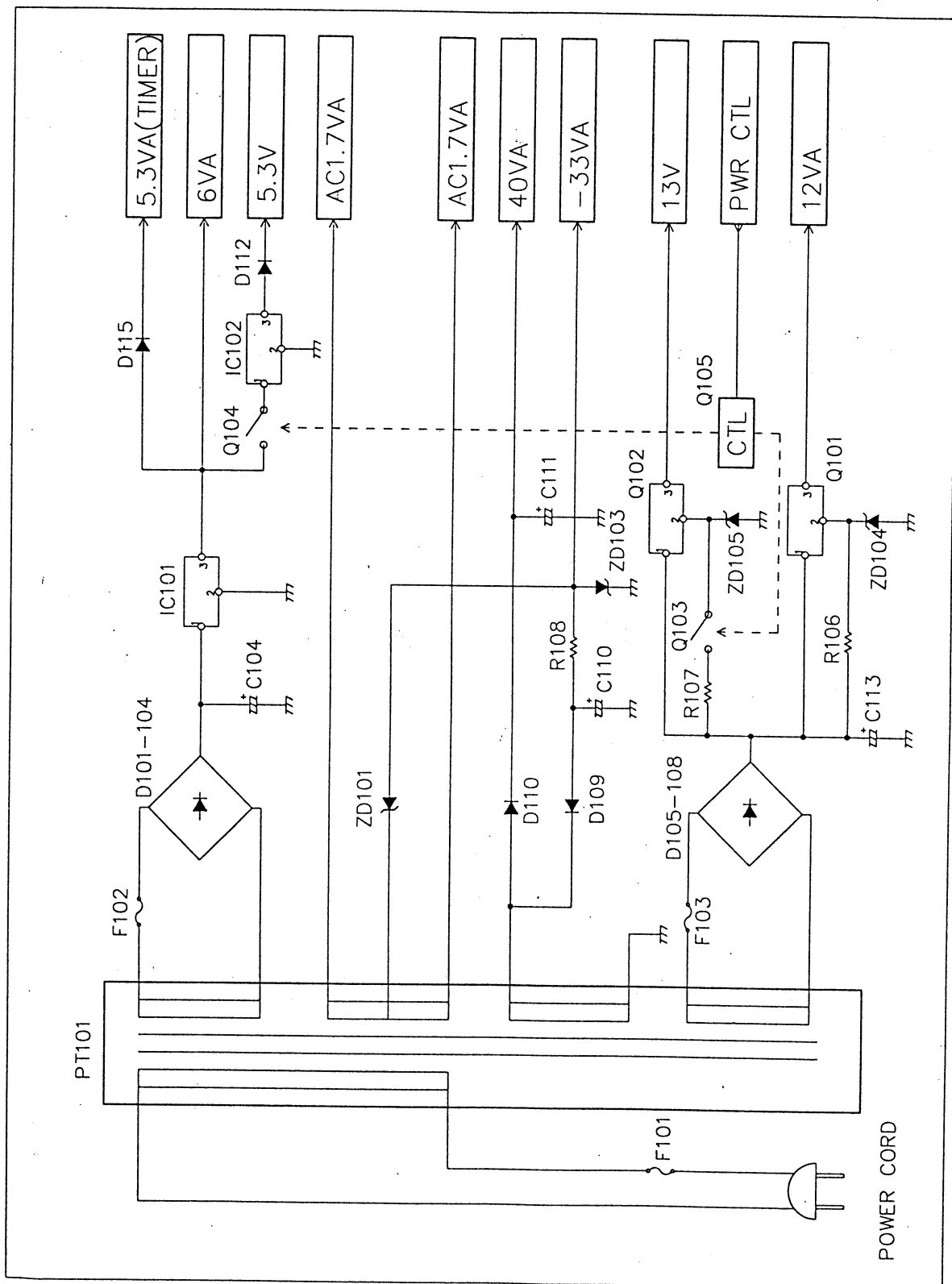
Purpose :
This is adjusting the bias current to specification in recording.

Procedure :
a. Connect the Level Meter terminal to both terminal R401.

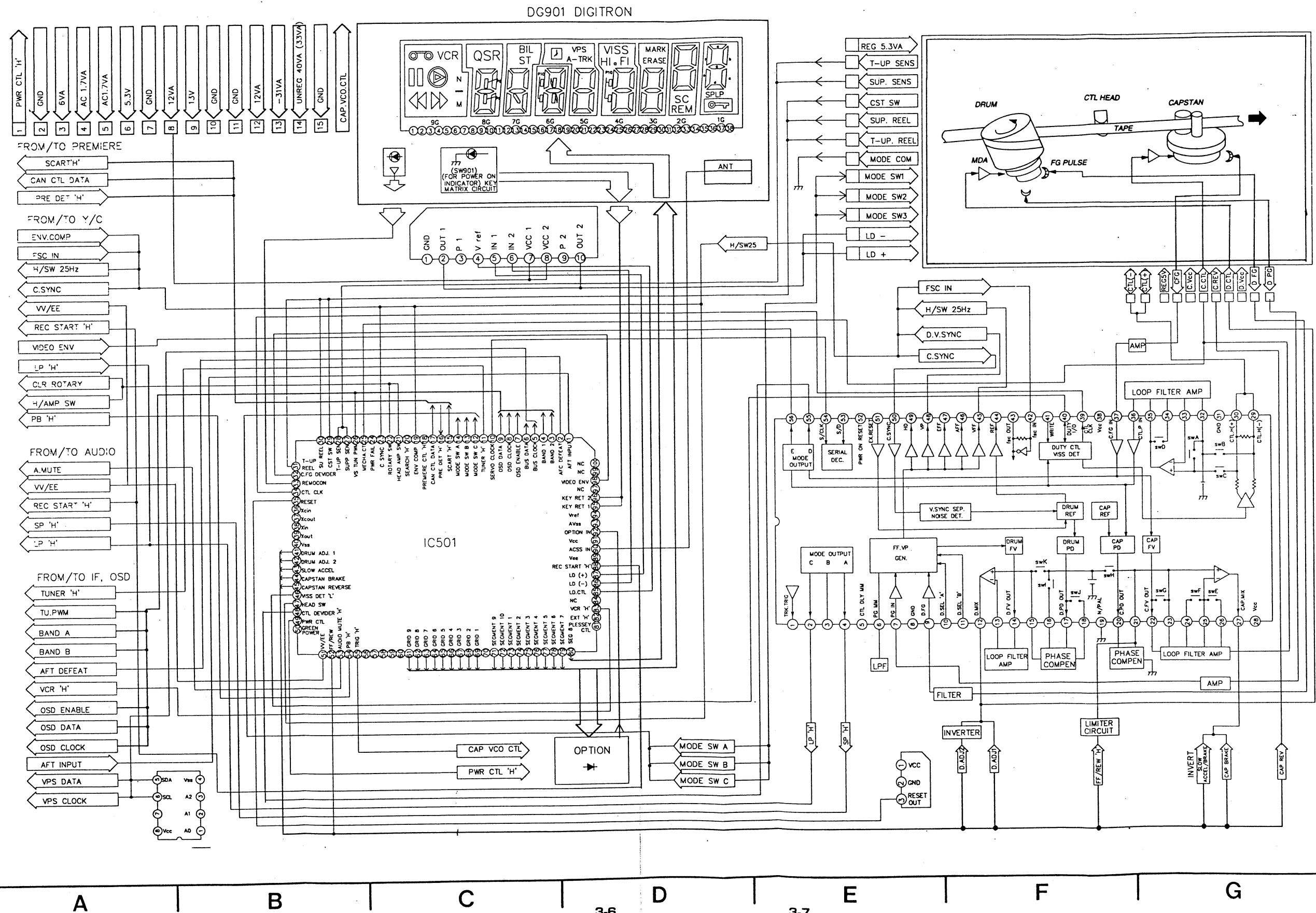
b. Confirm that the Oscillation Voltage in recording is 2.6mVRMS.
c. At this time, adjust VR401 and make the oscillation voltage fit to specification.

BLOCK DIAGRAMS

1. Power Block Diagram



2. Main System (Servo, Syscon, Timer) Block Diagram



5



3

2

1.

A

B

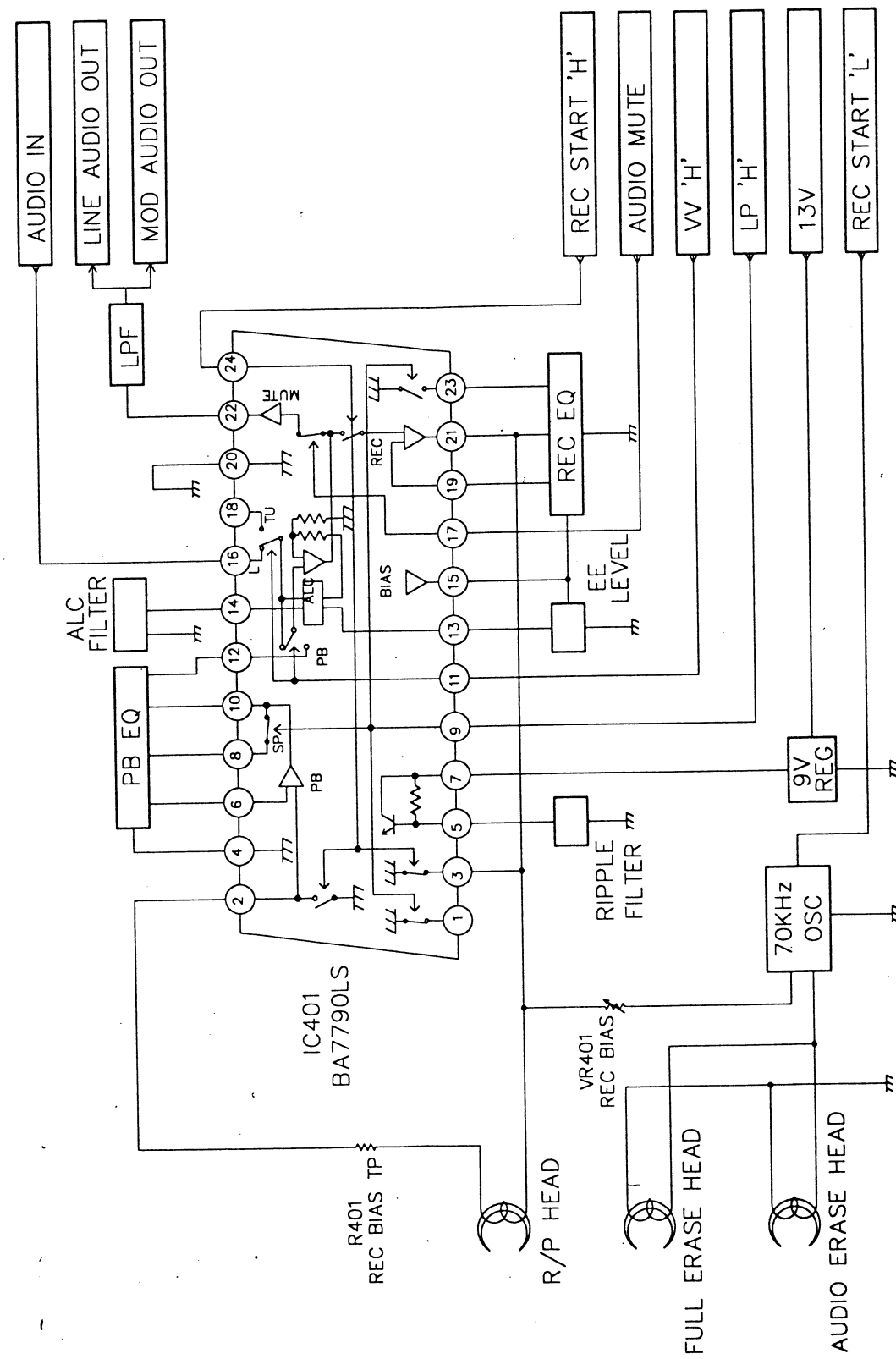
C

D

E

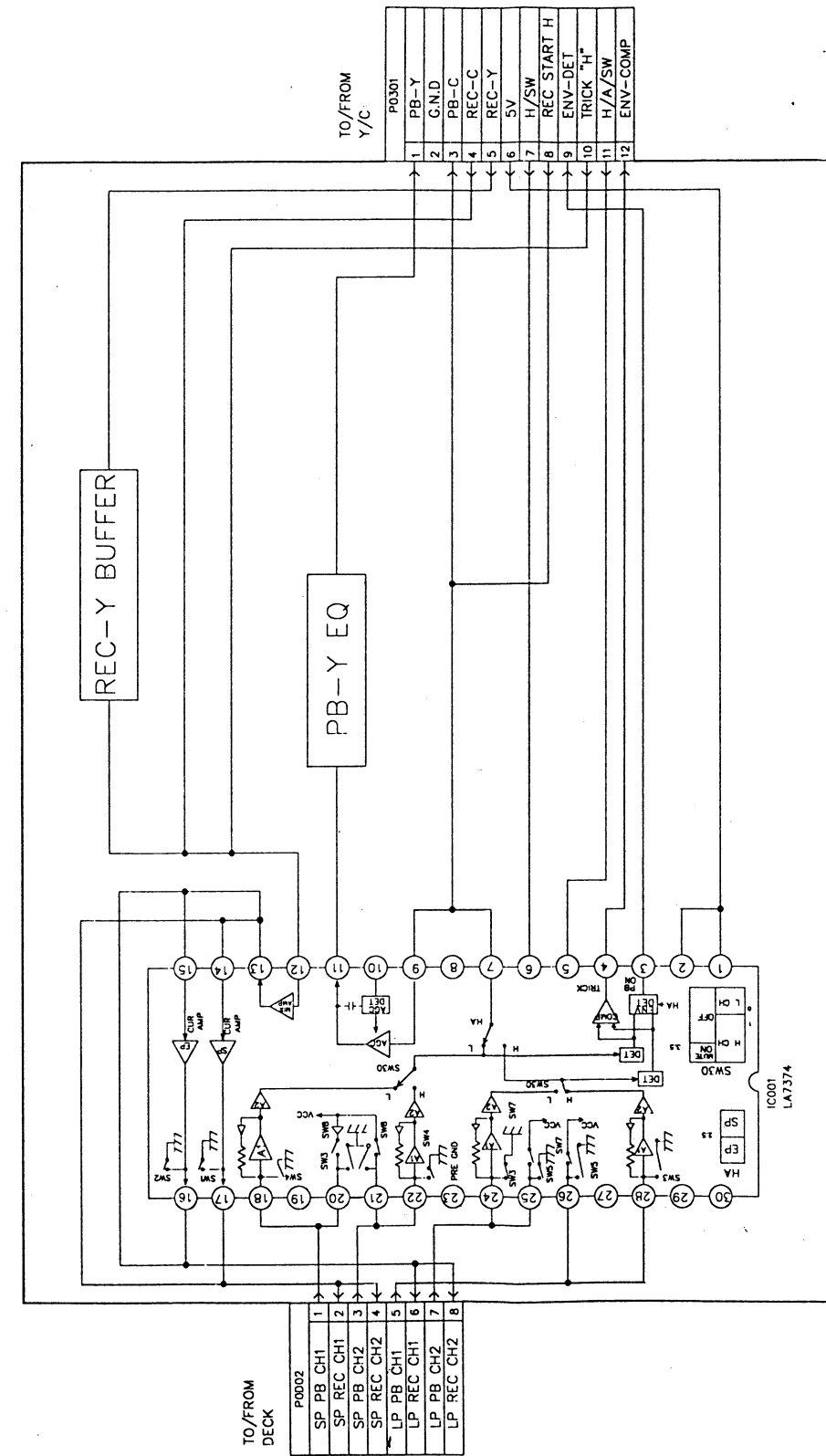
□

4. Audio Block Diagram



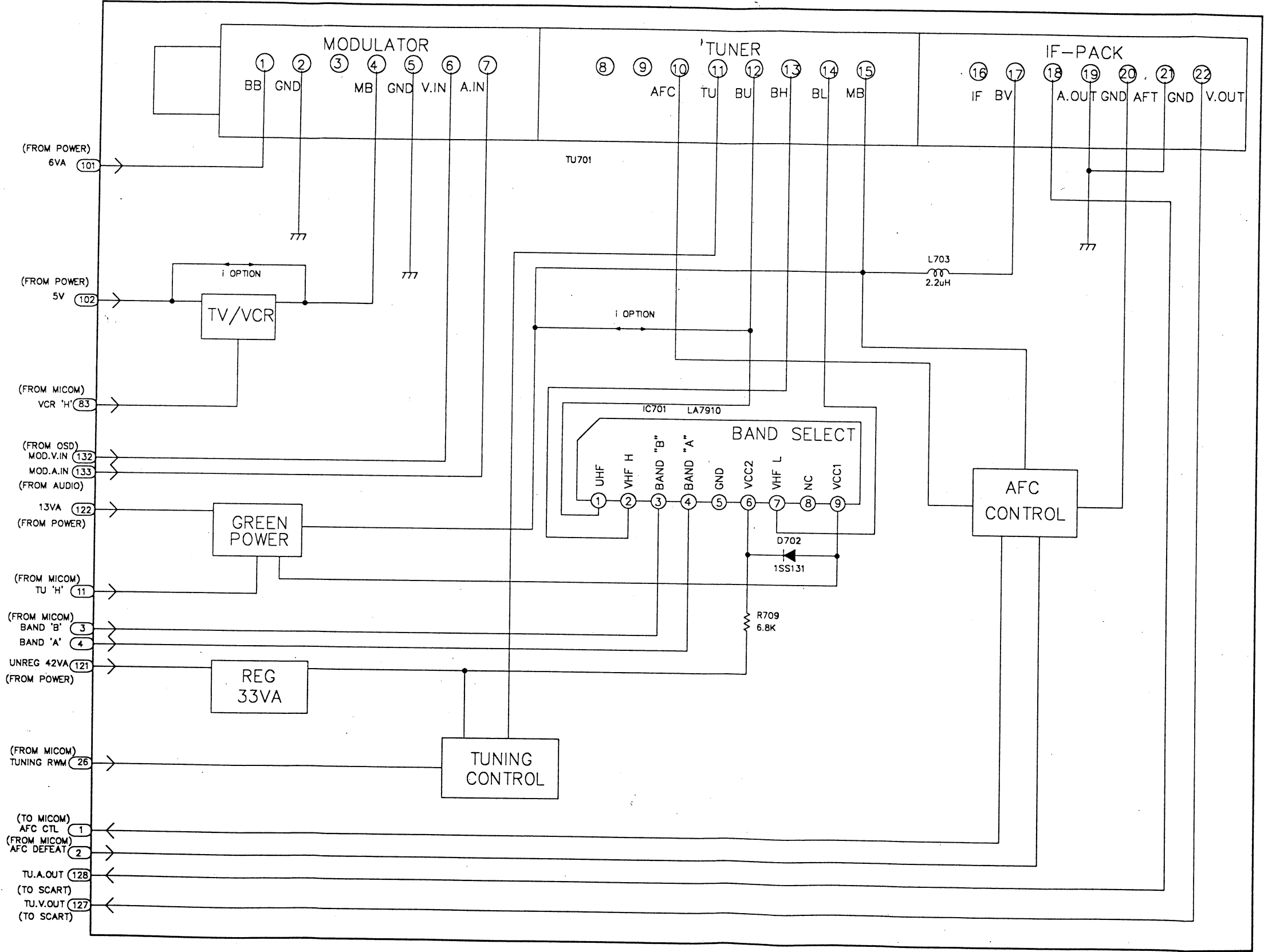
3-10

5. Pre-Amp Block Diagram

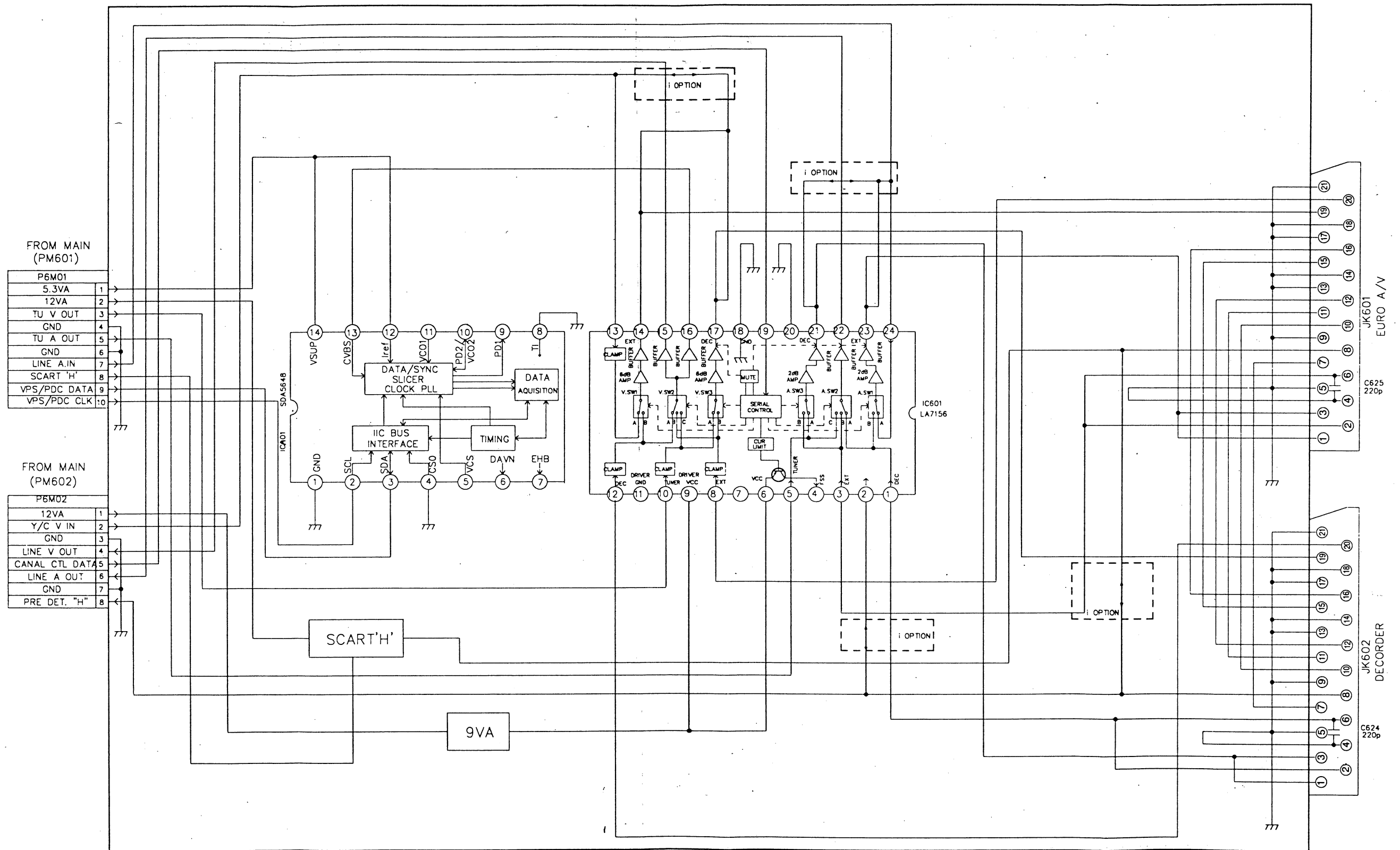


3-11

6. Tuner/IF Block Diagram

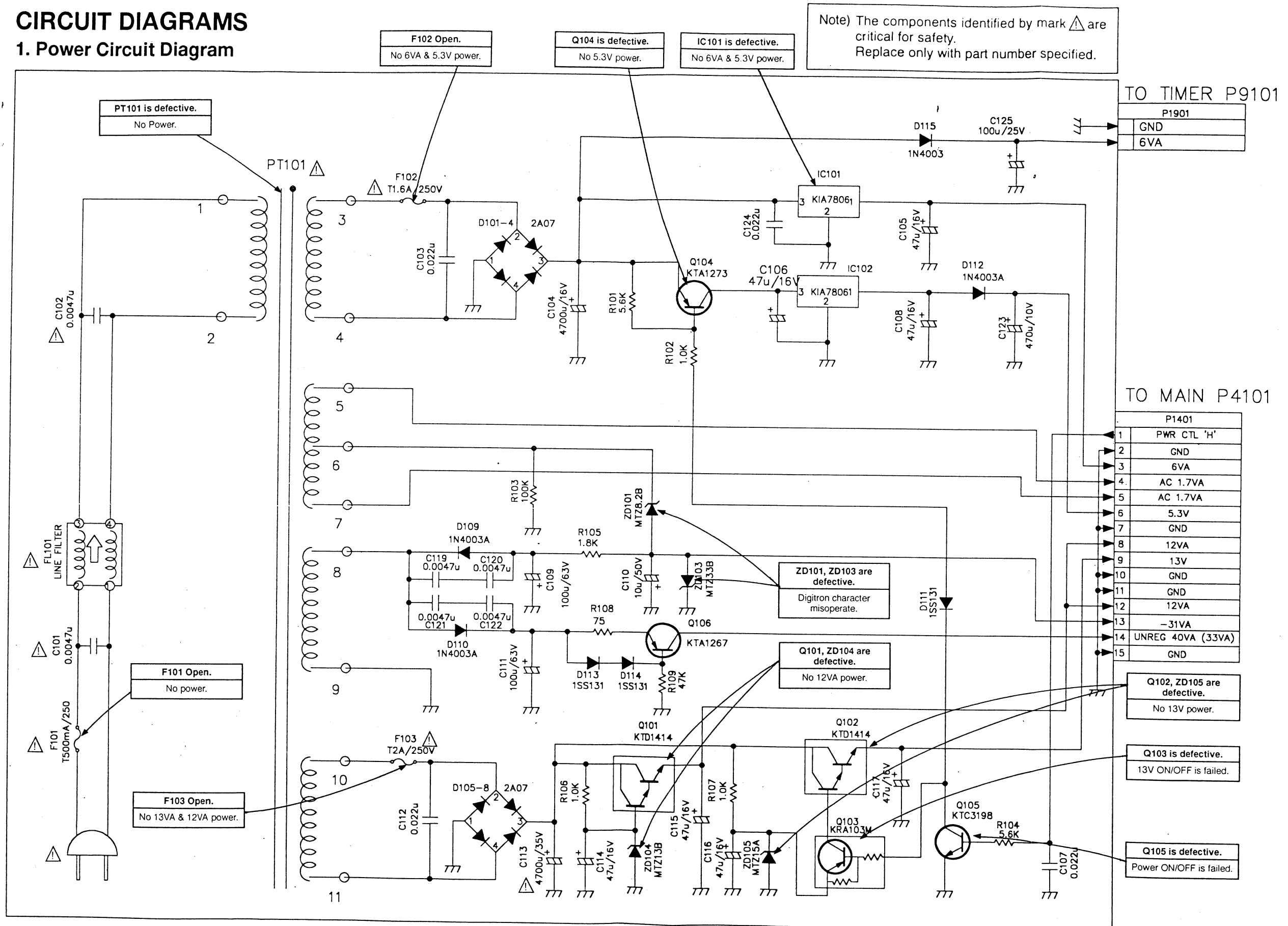


7. Premiere, VPS & PDC Block Diagram



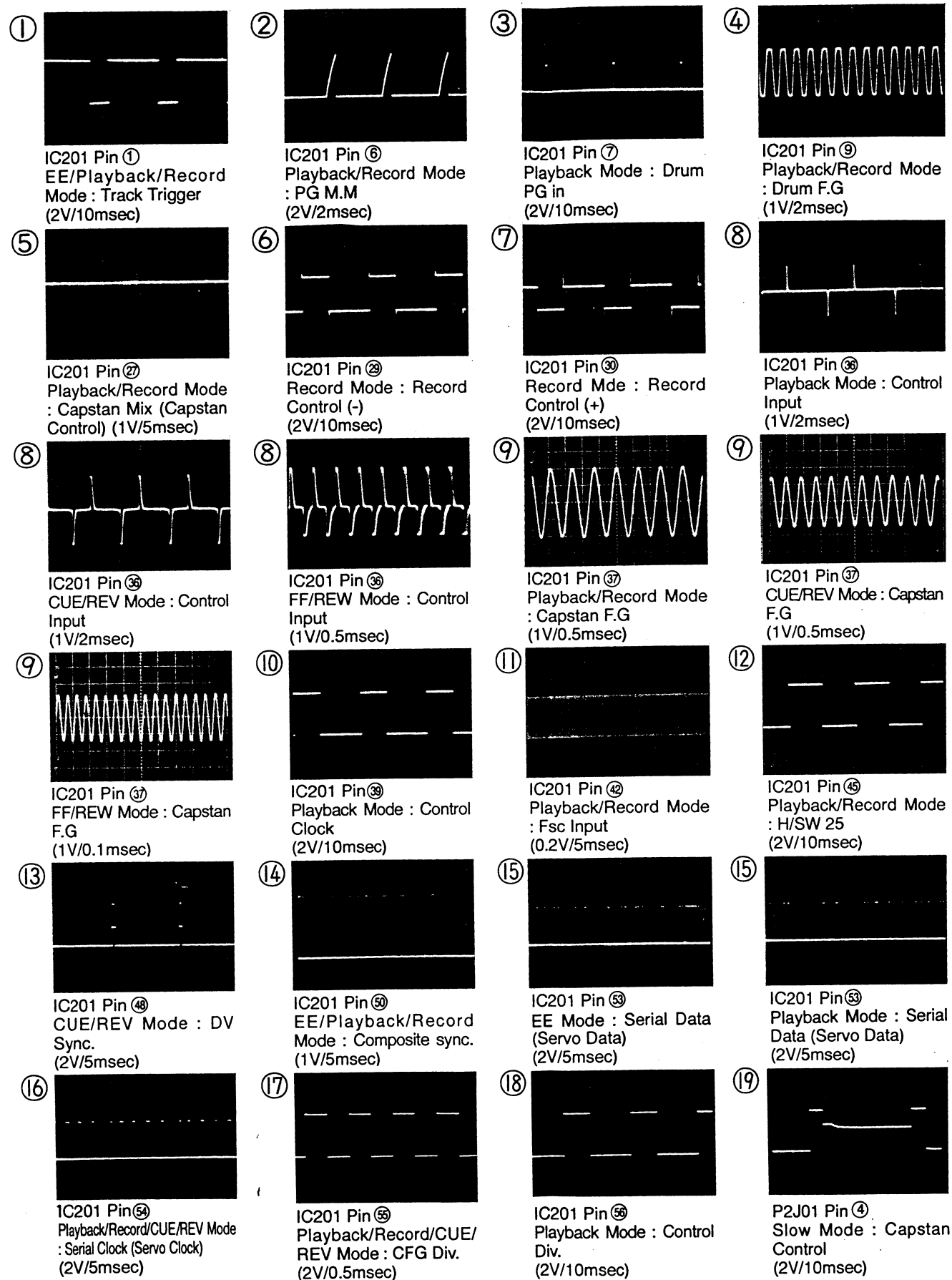
CIRCUIT DIAGRAMS

1. Power Circuit Diagram



94. 6. 14. 7-638A

• Servo Waveform



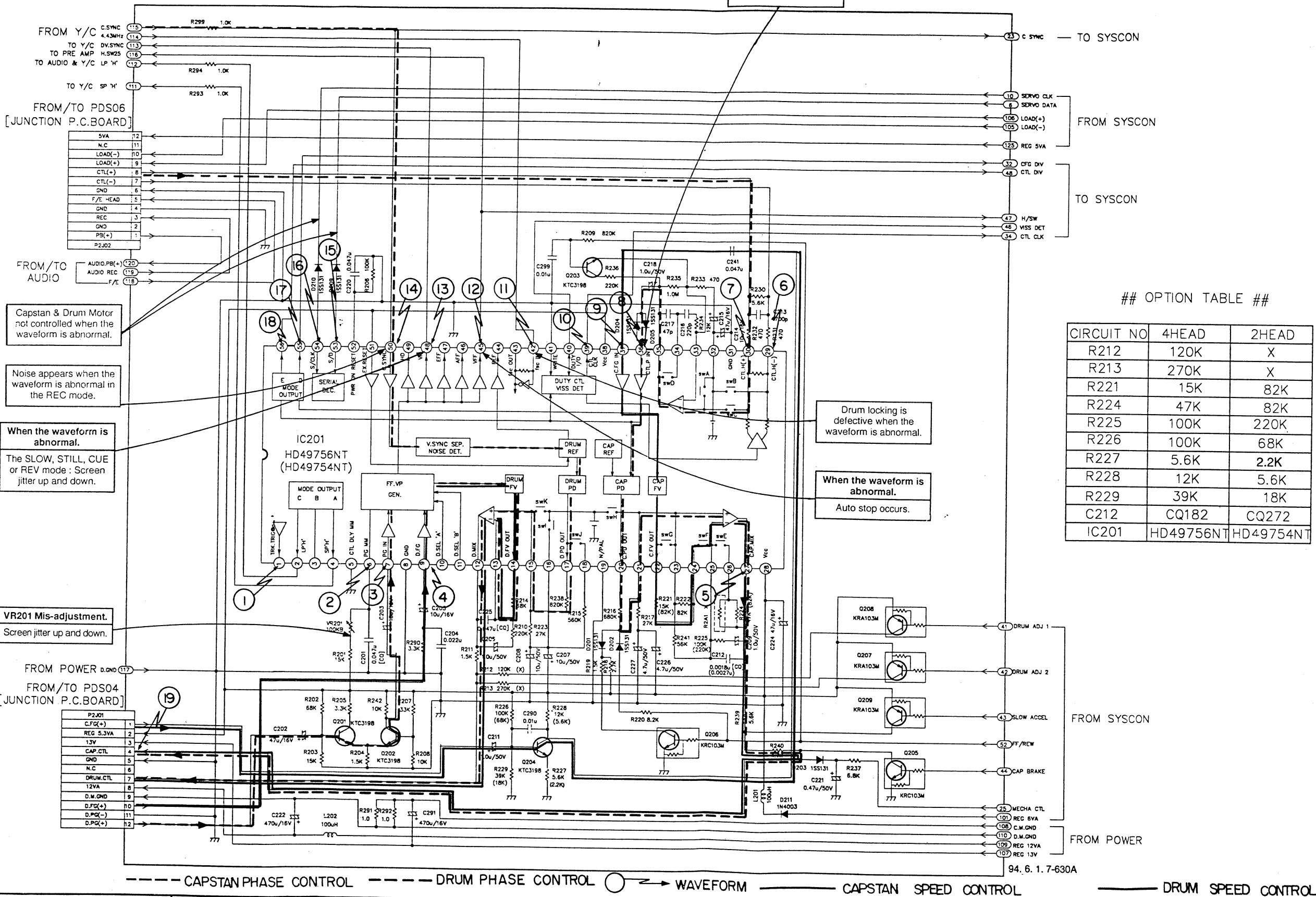
• Servo IC Voltage Sheet IC201 (HD49756NT)

Mode Pin No	Playback	Record	Mode Pin No	Playback	Record
① 4.9V 0V		4.9V 0V	③ 4V 2.4V 0.8V		2.4V
② 0V 0V		0V 0V	⑦ 3.6V 1.6V		3.6V 1.6V
④ 4.9V 0V		4.9V 0V	⑨ 4.9V 0V		4.9V 0V
⑥ 2.2V 0V		2.2V 0V	⑪ 4.9V 0V		4.9V 0V
⑦ 5.1V 2V		5.1V 2V	⑬ 2.7V 2.3V		2.7V 2.3V
⑧ 0V		0V	⑮ 3.8V 2.0V		3.5V 1.5V
⑨ 3.8V 2.2V		3.8V 2.2V	⑰ 4.9V 0V		4.9V 0V
⑩ 2.6V 2.6V 1.2V		2.6V 2.6V 1.2V	⑲ 4.9V 0V		4.9V 0V
⑫ 2.4V 2.4V 2.4V 2.4V		2.4V 2.4V 2.4V 2.4V	⑳ 4.9V 0V		4.9V 0V
⑬ 2.4V 2.3V 0V 2.4V		2.4V 2.3V 0V 2.4V	㉑ 4.9V 0V		4.9V 0V
⑭ 2.4V 2.4V 2.4V 2.4V 2.6V 2.6V 4.9V		2.4V 2.4V 2.4V 2.4V 2.6V 2.6V 4.9V	㉒ 4.9V 0.2V		4.9V 0.2V
⑮ 2.4V		4.8V 4.3V 0.5V 0V	㉓ 4.9V 0.6V		4.9V 0.6V
⑯ 2.4V		4.8V 4.3V 1.2V 0V	㉔ 4.9V 0V		4.9V 0V
⑰ 0V 2.4V 2.4V 2.4V		0V 2.4V 2.4V 2.4V	㉕ 4.9V 0V		4.9V 0V
⑱ 4.4V 2.4V 0.4V		2.4V	㉖ 4.9V 0V		4.9V

• Servo TR Voltage Sheet (PB/REC/EE mode)

Port TR No	Emitter	Collector	Base
Q201	0.6/0.6/0.6	4.9/4.9/4.9	0.9/0.9/0.9
Q202	0.6/0.6/0.6	1/1/1	1.2/1.2/1.2
Q203	2.45/2.45/2.45	2.4/2.4/2.4	0/0/0
Q204	1.6 0	4.2 2	2.2 0.6
Q205	0/0/5	2.6/2.6/0	0/0/0
Q206	0/0/0	5/5/5	0/0/0
Q207	4.9/4.9/4.9	2.2/2.2/0	4.9/4.9/4.9
Q208	4.9/4.9/4.9	2.6/2.6/0	4.9/4.9/4.9
Q209	4.9/4.9/4.9	2.2/2.2/0	4.9/4.9/4.9

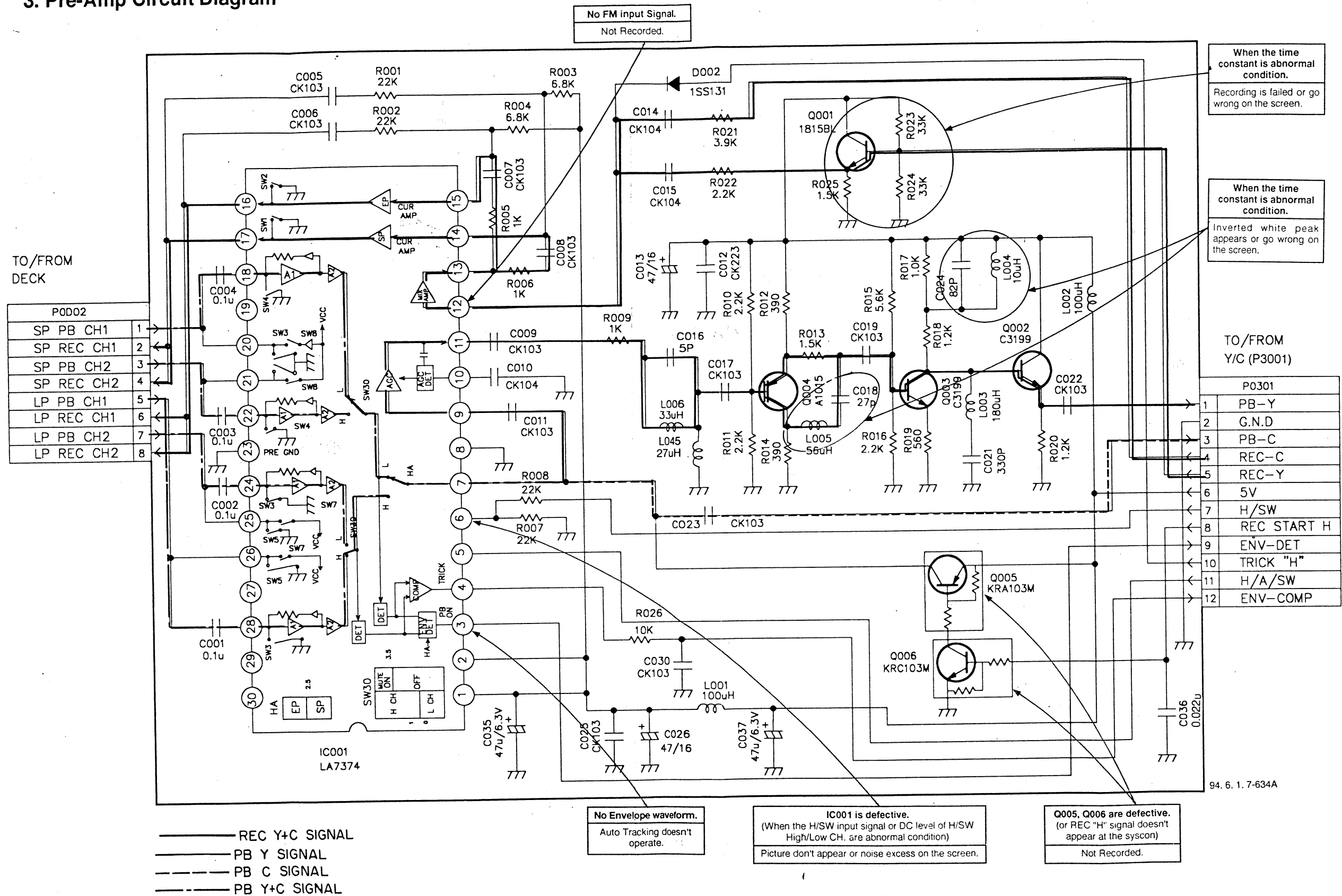
2. Servo Circuit Diagram






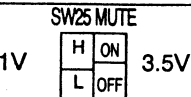









OPTION TABLE

CIRCUIT NO	4HEAD	2HEAD
R212	120K	X
R213	270K	X
R221	15K	82K
R224	47K	82K
R225	100K	220K
R226	100K	68K
R227	5.6K	2.2K
R228	12K	5.6K
R229	39K	18K
C212	CQ182	CQ272
IC201	HD49756NT	HD49754NT

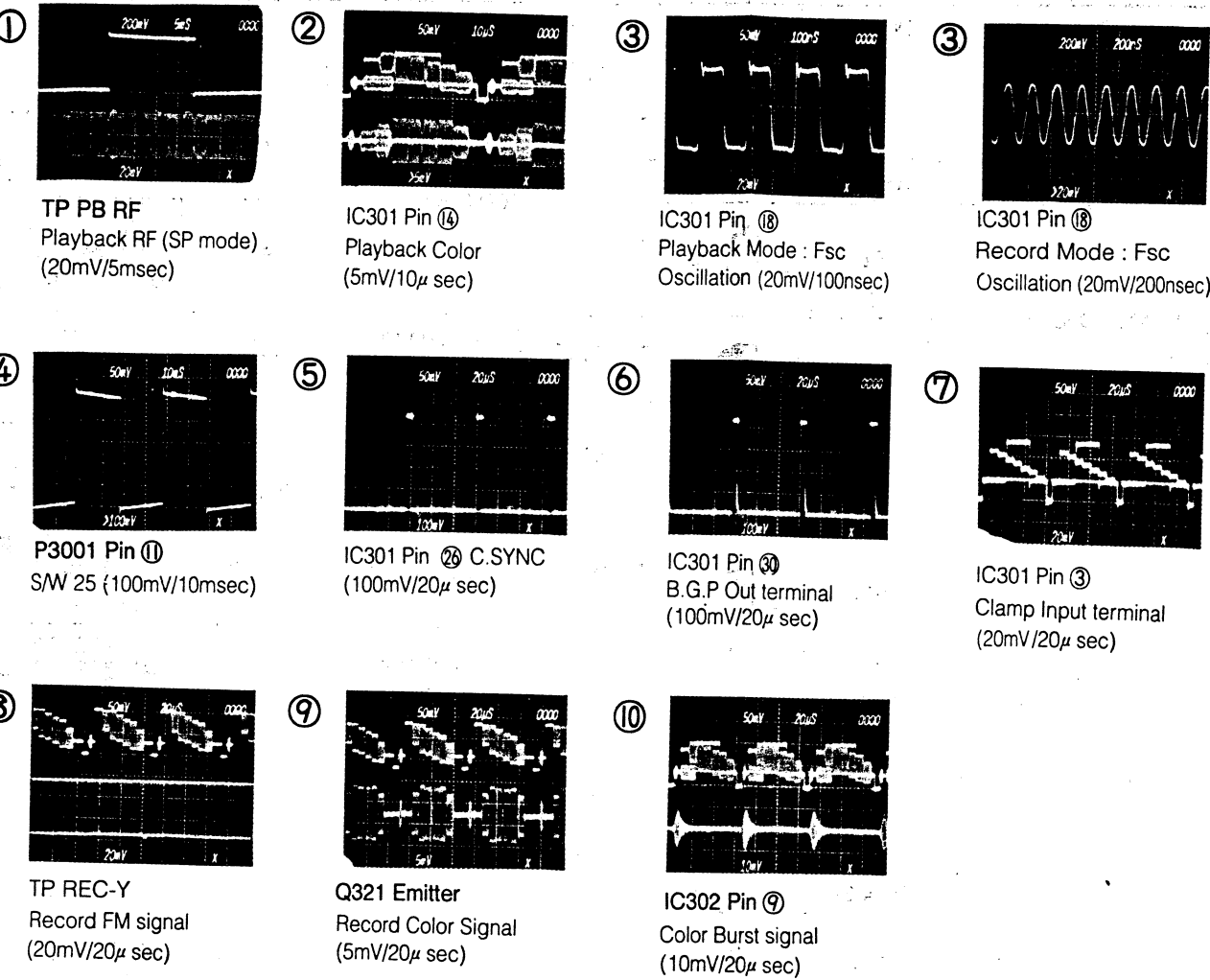
3. Pre-Amp Circuit Diagram



• Pre-Amp IC Voltage Sheet

Pin	Pin Function	DC Volt.	Waveform	Pin	Pin Function	DC Volt.	Waveform
1	Vcc	5V	—	15	REC Current	PB 1.6V	—
2	Vcc	5V	—		Amp Input	REC 1.7V	
3	PB Envelope Detection Output	PB 4V	—		16	REC Current Amp Output	0V
		REC 2.4V	—	—			
4	PB Envelope Comparator Output *Special Playback mode : LP>SP H(4.2V)	0V	—	17	REC Current Amp Output	PB 0V	—
						REC 4.2V	
5	PB, REC, HA Control *H=LP mode L=SP mode (H : More than 2.5V)	0V	—	18	PB Pre-Amp Input	PB 0.6V	—
						REC 0V	
6	PB SW25 Control	2.5V		19	N.C.	0V	—
	REC MUTE Control					—	
7	PB Chroma Output	PB 2V		20	REC mode Select S/W	PB 0V	—
	REC H Control (REC mode : More than 3.8V)	REC 4.9V	—			REC 4.1V	
8	Ground	0V	—	21	REC mode Select S/W	PB 0V	—
						REC 4.2V	—
9	PB FM AGC Input	PB 3.6V		22	PB Pre-Amp Input	PB 0.6V	—
		REC 3.5V	—			REC 0V	
10	PB FM AGC Detect	PB 0.7V		24	PB Pre-Amp Input	PB 0.6V	—
		REC 0V	—			REC 0V	
11	PB FM AGC Output	PB 2.4V		25	REC mode Select S/W	PB 0V	—
		REC 4V	—			REC 4.2V	—
12	PB Special Playback Control (Special PB mode : More than 3.5V)	PB 2.5V	—	26	REC mode Select S/W	PB 0V	—
						REC 4.2V	—
13	REC MIX Amp	PB 0V	—	28	PB Pre-Amp Input	PB 0.6V	—
		REC 1.6V	—			REC 0V	
14	REC MIX Amp	PB 0V	—	29	N.C.	0V	—
		REC 2.2V				0V	—
14	REC Current Amp Input	PB 1.6V	—	30	N.C.	0V	—
		REC 1.8V	—			—	

• Y/C Waveform (When taking a photograph of waveform, set probe of oscilloscope to 10:1)



• Function OSD IC Voltage Sheet

Normal (Blue Screen)											
5.12 (5.1)	1.63 (1.5)	4.55 (0)	2.35 (2.3)	2.35 (2.4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
20				15							
IC801 (M35010)											
1	5				10						
2.37 (2.4)	2.37 (2.4)	4.9 (4.9)	5.14 (5.1)	5.14 (0)	5.09 (5.1)	5.12 (5.1)	2.83 (2.3)	3.56 (3.5)	2.84 (2.7)	2.84 (2.8)	

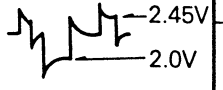








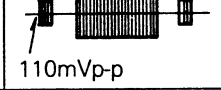

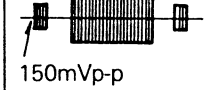


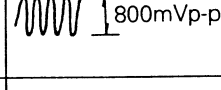

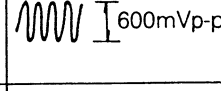
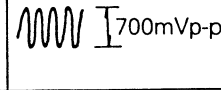
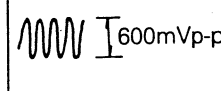

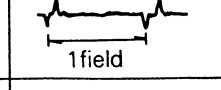
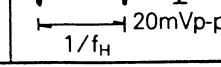
• Function OSD TR Voltage Sheet (Color Bar Normal Mode)

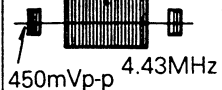
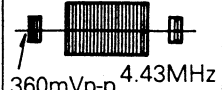
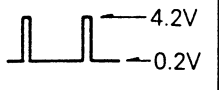

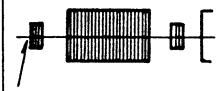

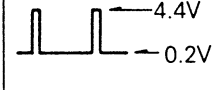
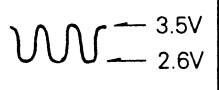
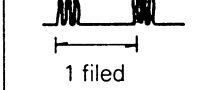
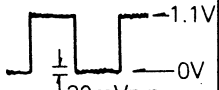

Port	Emitter	Collector	Base
TR No.			
Q803	2.4	12.2	2.5
Q804	0	1.76	0
Q805	0	3.76	0
Q807	3.12	3.12	3.76
Q810	5.52	0	4.83

(Blue back screen state after MENU, PRESET selected)

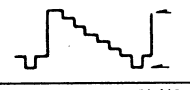

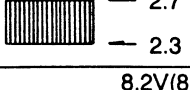
Port	Emitter	Collector	Base
TR No.			
Q803	2.4	12.5	2.5
Q804	0	0	0.8
Q805	0	0	4.38
Q807	1.68	2.73	0
Q810	5.51	0	4.82

• Y/C IC Voltage Sheet
IC301 (LA7390)

Pin	Pin Function	DC Volt	Waveform	Pin	Pin Function	DC Volt	Waveform
1	Main Deemphasis I.	PB		10	Ground	0V	—
		REC 0V	—	11	CCD Drive	PB	
2	Main Deemphasis II.	PB				REC	
		REC		12	Picture Control	2.5V	—
3	CLAMP Input	PB		13	ACC Filter	PB 2.2V	
		REC		REC 1.5V			
4	REC/PB select S/W (PB mode : More than 3.8V)	PB 4.2V	—	14	Low Band Conversion Chroma Input	PB 2.9V	
	Emphasis Output	REC			Low Band Conversion Chroma Output	REC 3V	
5	Main Emphasis Filter	PB 4.2V	—	15	AGC Filter	PB 2.2V	—
		REC		REC 2.4V		—	
6	SP S/W(SP mode : More than 3.9V)	PB 4.3V	—	16	REC APC Filter	PB 2.1V	—
	Non Linear Emphasis Filter	REC 4.3V	—	REC 2.1V		—	
7	Noise Canceller Filter	PB		17	Xo Input 4.43MHz	PB 3.7V	
	Detail Enhancer	REC				REC 3.7V	
8	VCA Filter	PB 3V	—	18	Xo Output 4.43MHz	PB 2.4V	
		REC 2.3V	—			REC 3.4V	
9	VCA Input	PB		19	SLD(Side Locked Detect) Filter	3.1V	—
		REC 1.9V	—	20	APC Filter	PB 3.15V	
					AFC Filter	REC 3.15V	

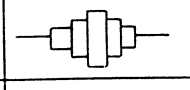
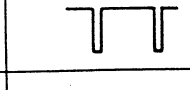
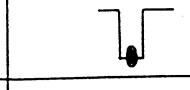
Pin	Pin Function	DC Volt	Waveform	Pin	Pin Function	DC Volt	Waveform
21	Comb Filter Drive	PB 2.4V		29	Vcc 1	5V	—
		REC 2.4V		30	BGP Output	—	
22	Color Killer Filter (Color mode : 2V Killer mode : 3.1V)	2V	—	31	Video Signal Input	—	
23	PB Amp Input MESECAM-H (MESECAM mode : More than 4V in the condition of PBmode)	2V		32	AGC Filter	REC/PB1.4V	—
				33	PB FM Input	PB 3.3V	
24	Vcc 2	5V	—	34	AGC Adjust	REC 3.3V	—
25	REG. 4.2V	4.2V	—		DOC Stop Control (DOC stop for more than 3.9V)	PB3.3V	—
26	SYNC Output	—		35	FM Output	REC 3V	
27	D.V SYNC Input (Video Output is mute when D.C3.5V is over)	PB Search			H/SW(25Hz) Input	REC/PB	
28	Video Output	REC/PB		36	FM Modulation Input	REC/PB 2.2V	—

• CCD
IC303 (MSM7403MS)

Pin No.	Voltage
1	0(0)
2	0(0)
3	4.8V(4.98V)
4	 3.7 2.7 3.28V(3.38V)
5	2V(2.1V)
6	 2.4 1.8 2.09V(2.16V)
7	 2.7 2.3 2.53V(2.56V)
8	8.2V(8.47V)

PB(REC)

• MESECAM
IC302 (BA7025L)

Pin No.	Voltage
1	3.5V(3.6V)
2	 0.2Vp-p 0(0)
3	0(0)
4	3.5V(0)
5	 5V -0.7V 4.57V(4.56V)
6	0(0)
7	 4.4 3.2 4.4V(4.4V)
8	0(0)
9	3V(3V)
10	0(0)
11	3.7V(3.46V)
12	0(4.2V)
13	3.7V(3.49V)
14	0(4.15V)
15	0(0)
16	0(4.3V)
17	4.9(4.99V)
18	4.9(4.99V)

PB(REC)

4. Y/C & Function OSD Circuit Diagram

When the time constant is abnormal condition.
Inverted white peak appears or go wrong on the screen.

X302 is defective.
• No color.
• Drum speed not controlled.

Q309 is defective:
Color signal is defective or Beat occurs.

L806, C810, C811 are defective.
F.OSD character position go wrong.

DL301 is defective.
Horizontal line beat appears on the color signal.

Q301, Z301, IC302 are defective.
MESECAM Mode : Detecting is failed.
→ Color signal is unstable.

IF C.SYNC doesn't input.
(Q810 is defective)
F.OSD doesn't appear in the EE and PB mode.

Q806 is defective.
SECAM Mode : F. OSD character drag.

IC301 LA7390

Q314, Q315 are defective.
Playback is failed.

Q317, Q318, Q319 FL301 are defective.
No color in the PB mode.

Q305, Q306, Q307, IC303 are defective.
• Drop-out compensation is failed.
• Screen is defective in the PB mode.

Q804 is defective.
Video signal interfere on the Blue Back screen.

94. 6. 1. 7-632A
X801 is defective.
Blue Back Screen is bad.

5

4

3

2

1

D302 is defective.
Switch to EE mode in the PB mode.

Q312, Q313 are defective.
Playback screen doesn't appear.

REC Y SIGNAL
REC C SIGNAL

PB Y SIGNAL
PB C SIGNAL

VIDEO OUT SIGNAL
VIDEO IN SIGNAL

WAVEFORM

A

B

C

D

E

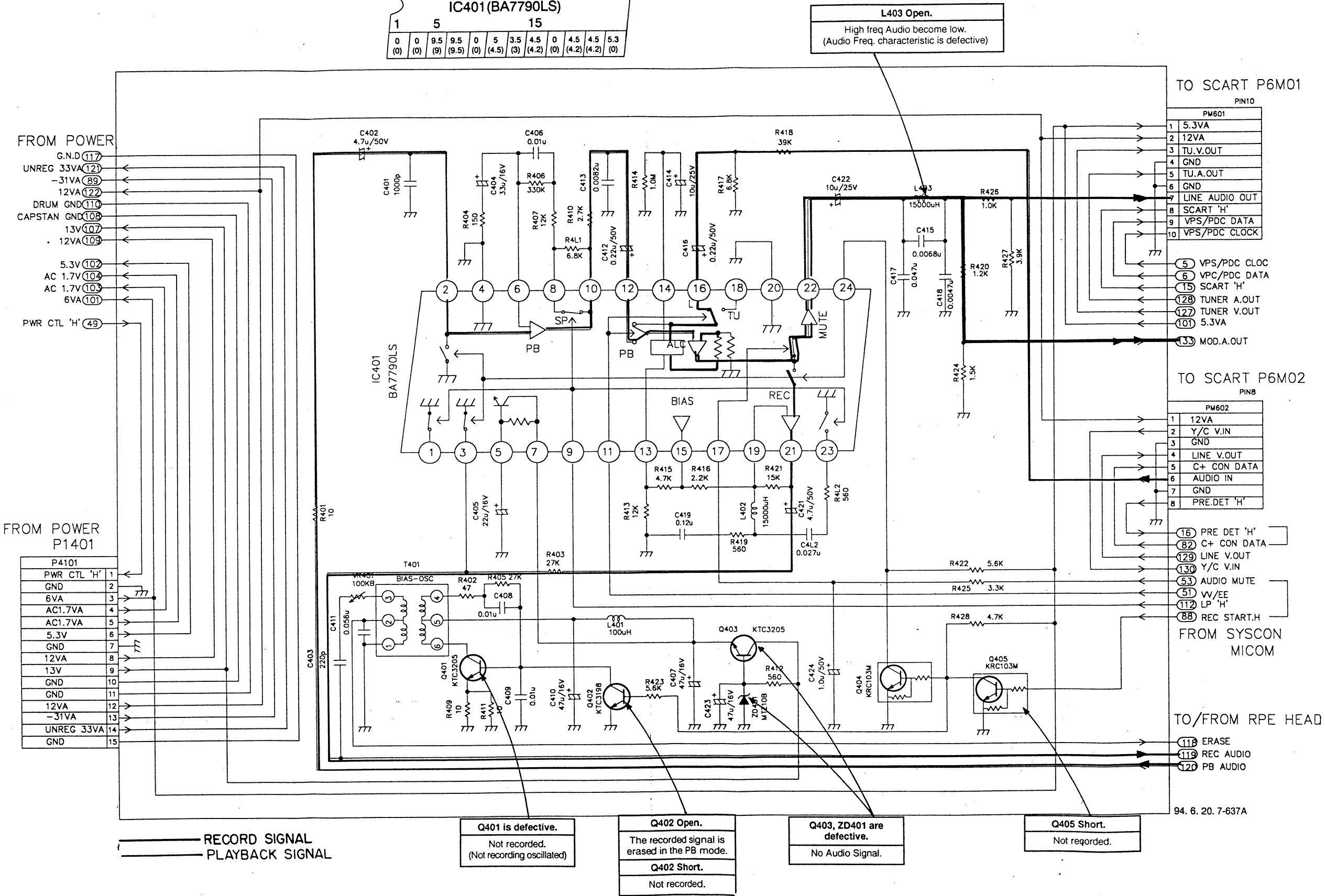
F

G

H

5. Audio Circuit Diagram

PB(REC)											
3.8	0	3.8	3.5	3.5	4.1	0	4.5	4.5	0	4.2	0
(3.5)	(0)	(3.8)	(3.5)	(3.5)	(4.1)	(0)	(4.2)	(4.2)	(0)	(4)	(5.2)
10											
IC401(BA7790LS)											
1	5	15									
0	0	9.5	9.5	0	5	3.5	4.5	0	4.5	4.5	5.3
(0)	(0)	(9)	(9.5)	(0)	(4.5)	(3)	(4.2)	(0)	(4.2)	(4.2)	(0)

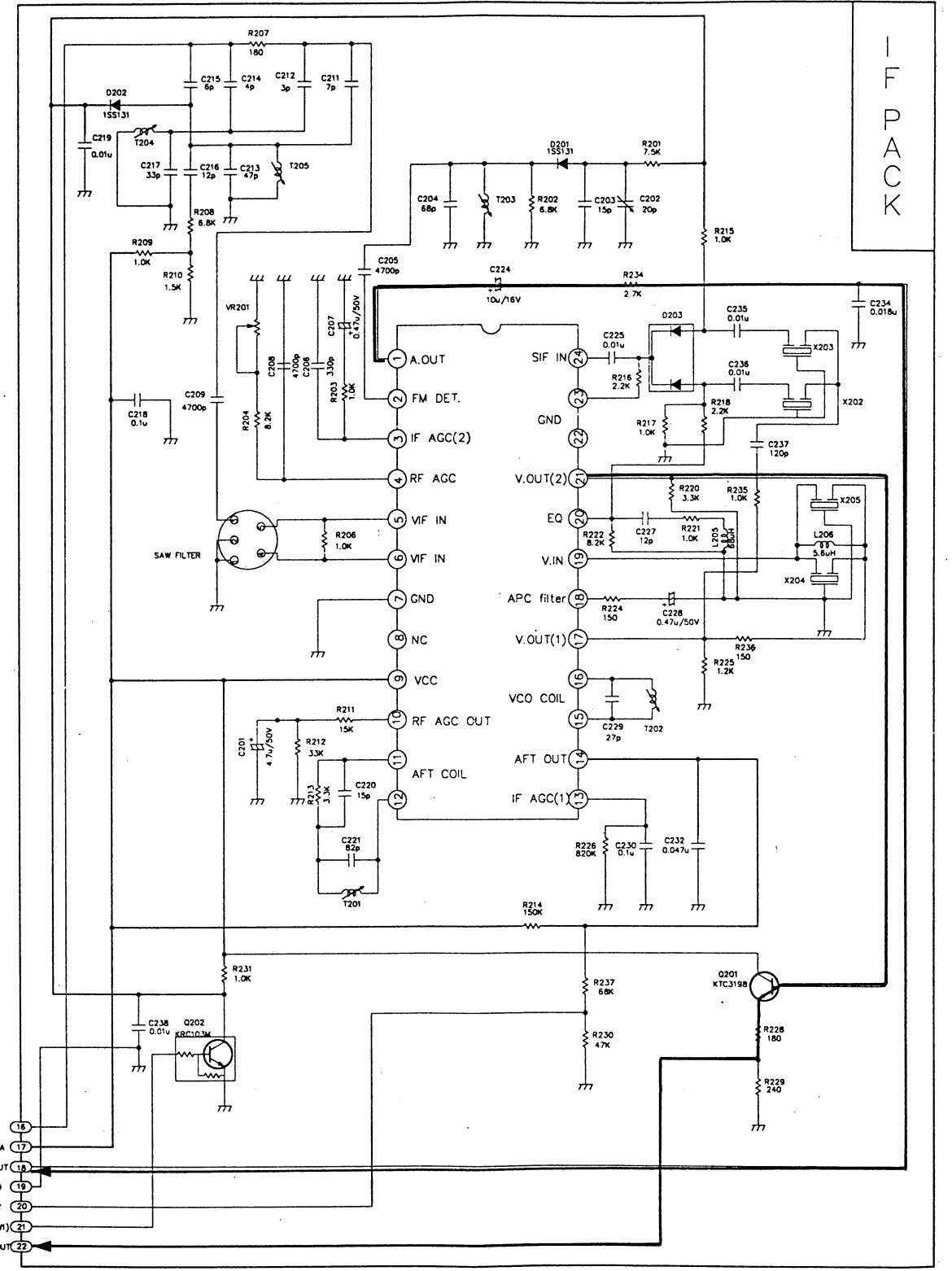
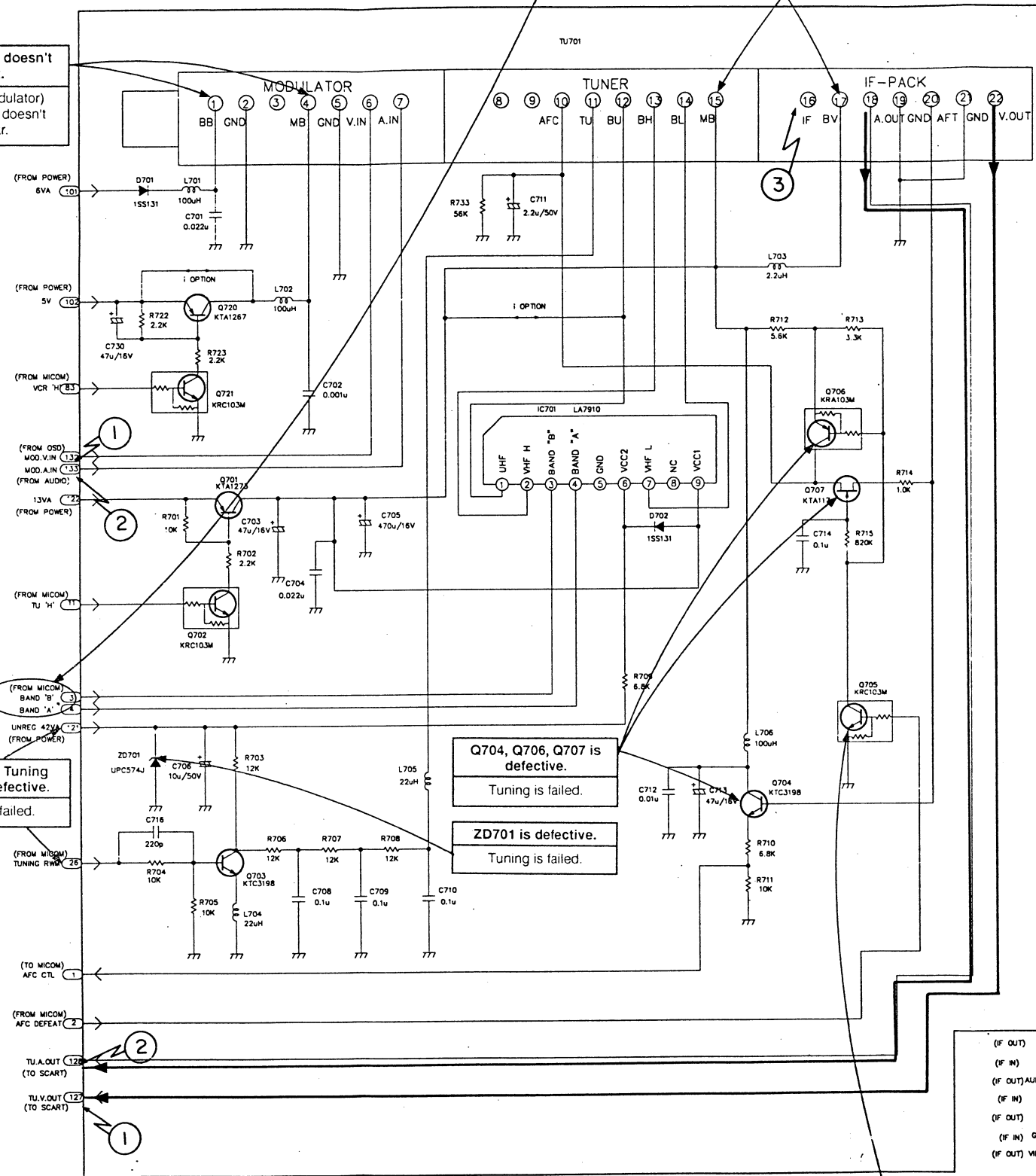


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94. 6. 14. 7-631A

7. Tuner/IF Circuit Diagram



— VIDEO SIGNAL
— AUDIO SIGNAL
○ WAVEFORM

Q705 is defective or nothing 5V at the Q705 Base terminal.
NOR/PRE switching is failed.

• Tuner/IF TR Voltage Sheet

Port TR No.	Emitter	Collector	Base
Q701	12.39	12.34	11.65
Q702	0	0	5.12
Q703	0	8.99	0
Q704	3.62	12.29	4.19
Q705	0	12.26	0
Q706	12.29	4.12	12.26
Q707	4.12	4.68	4.12
Q720	5.23	5.11	4.43
Q721	0	0	5.12

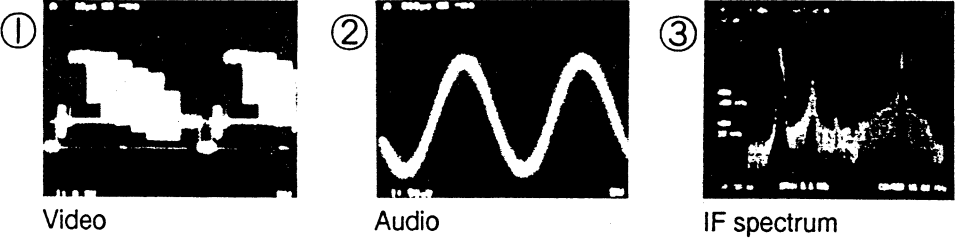
• Tuner/IF IC Voltage Sheet
Band Select IC701 (LA7910)

Pin	Pin Function																													
1	UHF 12V																													
2	VHF High 12V																													
3, 4	<table border="1"><tr><td><div>Pin Band</div></td><td>3</td><td>4</td><td>1</td><td>2</td><td>7</td></tr><tr><td>VHF Low</td><td>L</td><td>H</td><td>L</td><td>L</td><td>H</td></tr><tr><td>VHF High</td><td>H</td><td>L</td><td>L</td><td>H</td><td>L</td></tr><tr><td>UHF</td><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td></tr></table>	<div>Pin Band</div>	3	4	1	2	7	VHF Low	L	H	L	L	H	VHF High	H	L	L	H	L	UHF	L	L	H	L	L					
	<div>Pin Band</div>	3	4	1	2	7																								
	VHF Low	L	H	L	L	H																								
	VHF High	H	L	L	H	L																								
	UHF	L	L	H	L	L																								
③, ④ High=3V																														
①, ②, ⑦ High=12V																														
5	GND																													
6	14VA																													
7	VHF Low 12V																													
8	N.C																													
9	12VA																													

• Tuner

BB	GND	NC	MOD.V.IN	MOD.A.IN	AFC	TU	BU	BH	BL	MB	IF	BV	A.OUT	GND	AFT	GND	V.OUT
Power DC 6VA	0	0	1Vp-p	-5dBm 1.3Vp-p	DC 4V	DC 0-33V	UHF 12V	VHF _H 12V	VHF _L 12V	DC 12VA		DC 12VA	2.3Vp-p	0	DC 4V	0	1Vp-p

• Tuner/IF Waveform



• Premiere Switching IC
IC601 (LA7156) 0dBm=2.3Vp-p

Pin	Pin Function	Voltage
1	Premiere Audio Input	0dBm
2	Premiere Detect "H"	DC 5V
3	Line Audio Input	0dBm
4	NC	
5	Tuner Audio Input	0dBm
6		DC 9VA
7	NC	
8	Line Video Input	1Vp-p
9		DC 9VA
10	Tuner Video Input	1Vp-p
11	NC	
12	Premiere Video Input	1Vp-p
13	OSD Video Input	1Vp-p
14	Line Video Output	2Vp-p (75Ω mismatch)
15	Y/C Video Input	1Vp-p
16	VPS/PDC Video Output	1Vp-p
17	Premiere Video Output	2Vp-p (75Ω mismatch)
18	GND	
19	Premiere Control DATA	
20	GND	
21	Premiere Audio Output	0dBm
22	Audio Output	-2dBm
23	Line Audio Output	0dBm
24	Audio Input	-2dBm

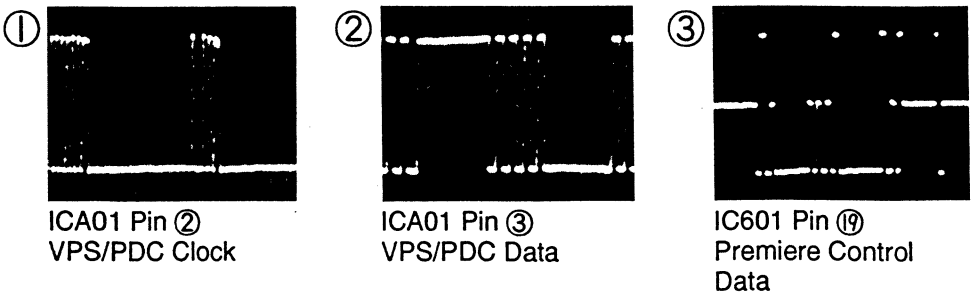
• VPS/PDC IC
ICA01 (SDA5649)

Pin	Pin Function	Voltage
1	GND	
2	Serial Clock	
3	Serial DATA	
4	GND	
5	NC	
6	NC	
7	NC	
8	GND	
9,10, 11		DC 2.5V GND
12	Current Reference	DC 1.5V
13	VPS/PDC Video Input	1Vp-p
14		DC 5VA

• VPS/PDC TR Voltage Sheet

Port TR No.	Emitter	Collector	Base
Q601	9.17	12	10
Q604	12.45	12.44	11.68
Q605	0	0	4.6

• Waveform



8. Premiere, VPS & PDC Circuit Diagram

No Video signal.
VPS/PDC not operating.

ICA01 is defective.
VPS/PDC not operating.

Premiere control DATA
is defective.
TU/AV/Premiere is not
switched.

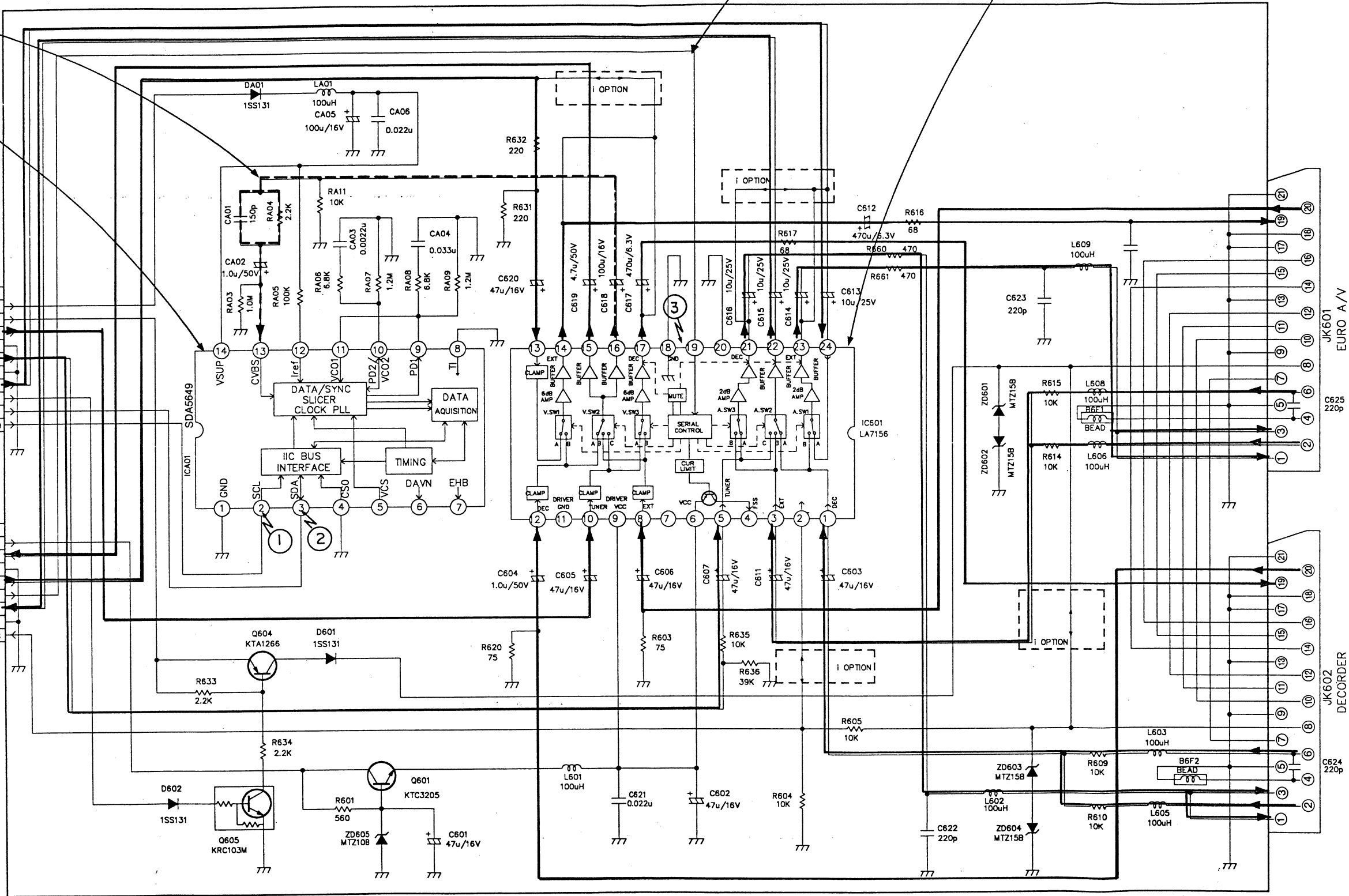
IC601 is defective.
TU/AV/Premiere is not
switched.

FROM MAIN
(PM601)

P6M01	1
5.3VA	2
12VA	3
TU V OUT	4
GND	5
TU A OUT	6
GND	7
LINE A.IN	8
SCART 'H'	9
VPS/PDC DATA	10
VPS/PDC CLK	11

FROM MAIN
(PM602)

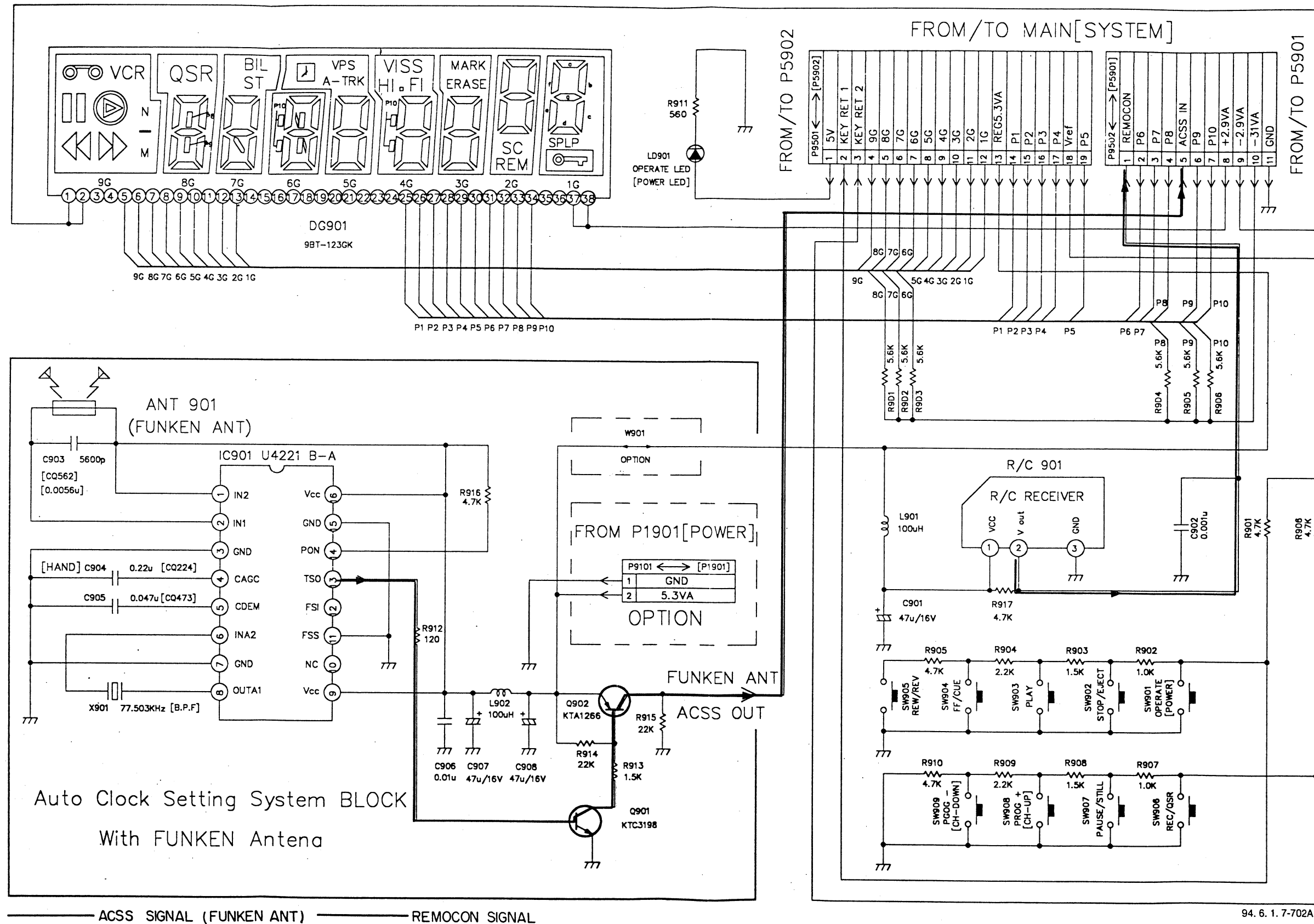
P6M02	1
12VA	2
Y/C V IN	3
GND	4
LINE V OUT	5
CANAL CTL DATA	6
LINE A OUT	7
GND	8
PRE DET. "H"	9



— VIDEO SIGNAL
- - - VPS/PDC VIDEO SIGNAL
— AUDIO SIGNAL
○ — WAVEFORM

94. 6. 14. 7-636A

9. Timer Circuit Diagram



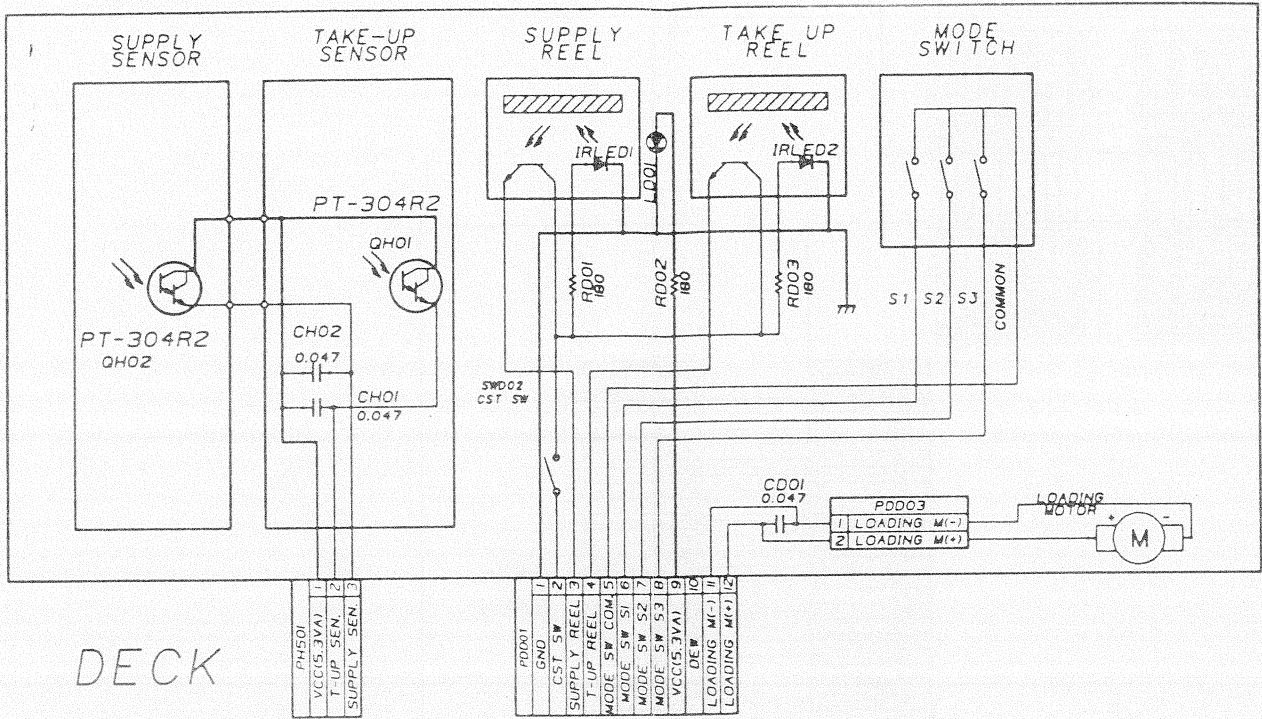
94. 6. 1. 7-702A

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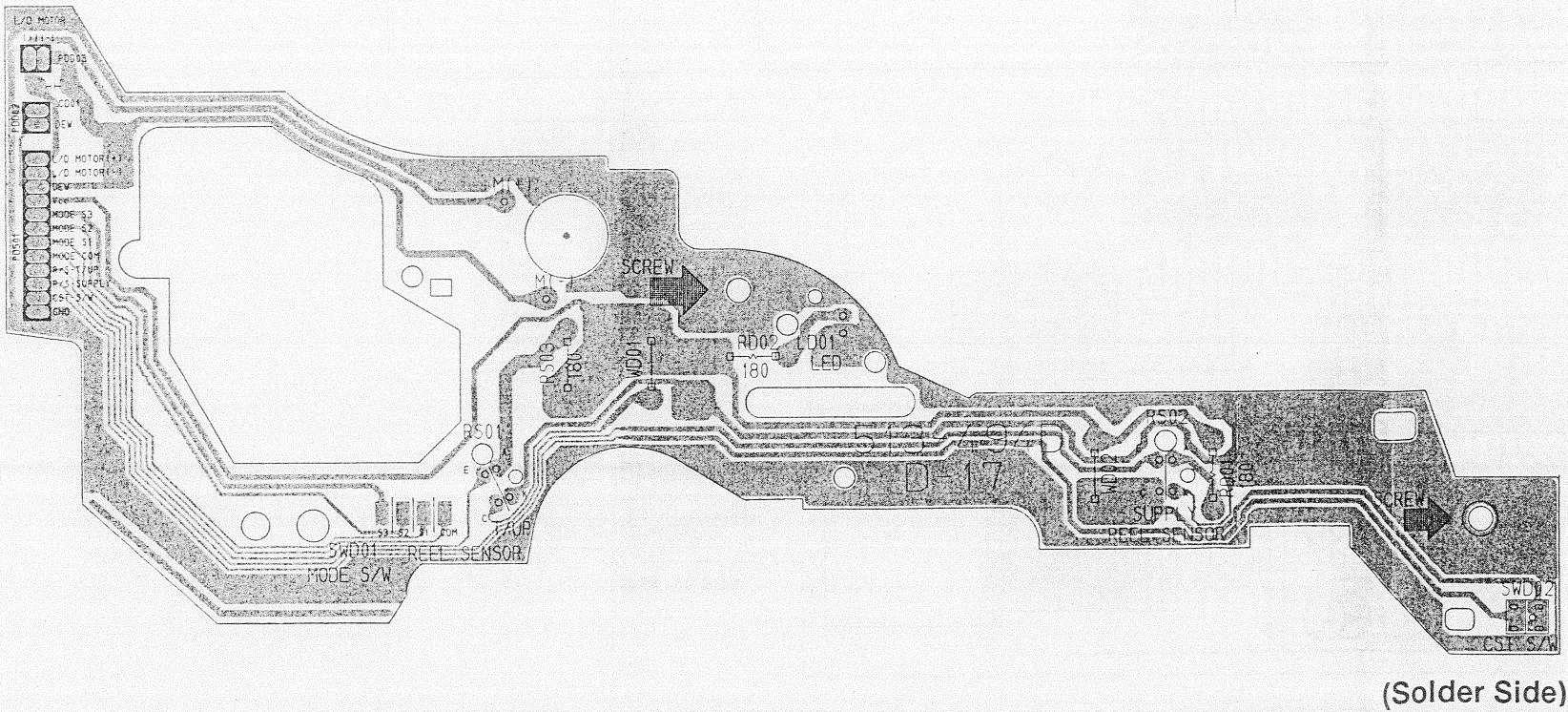


DECK JUNCTION

1. Deck Junction Circuit Diagram



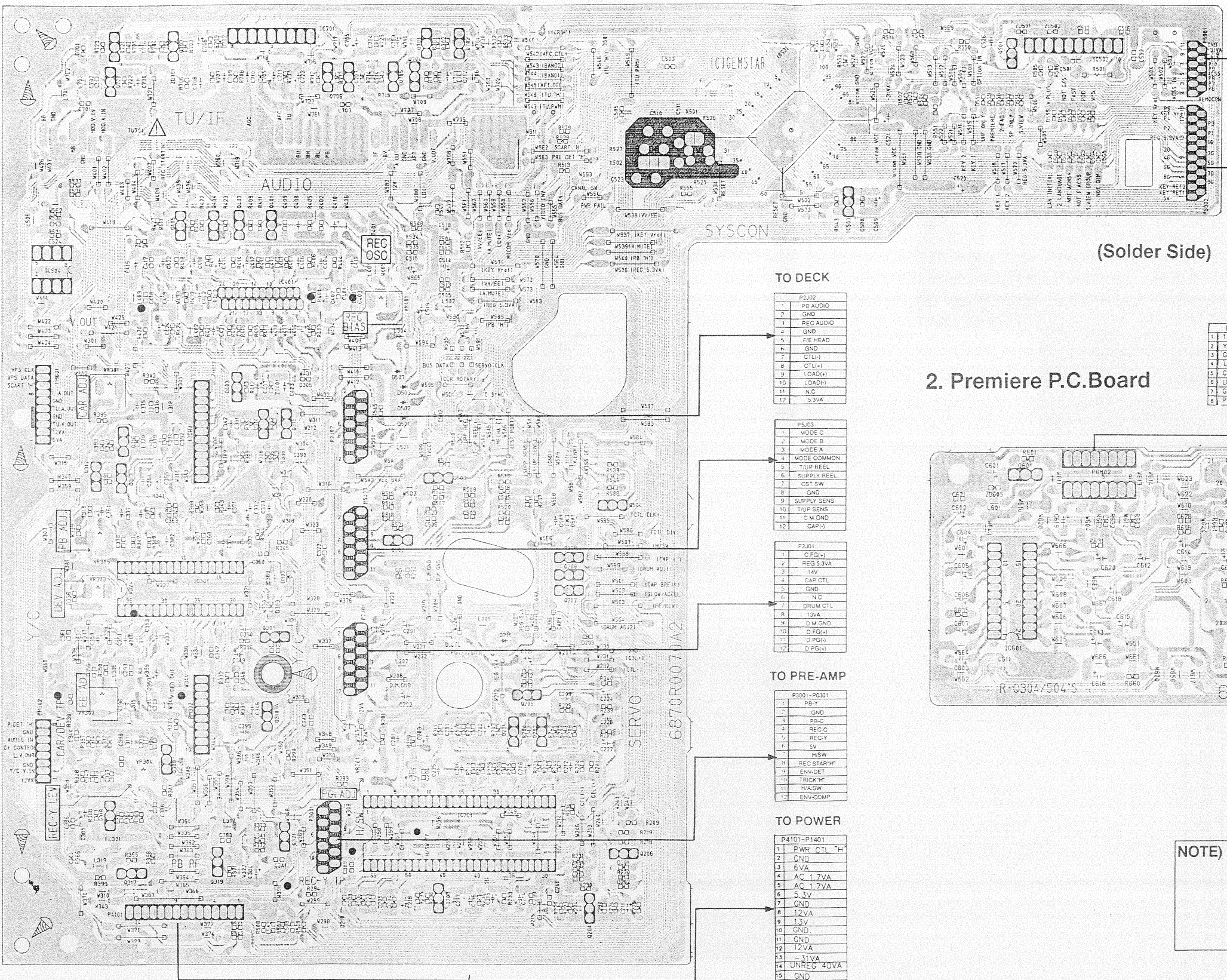
2. Deck Junction P.C.Board



PRINTED CIRCUIT BOARD DIAGRAMS

3. Y/C F

1. Main P.C.Board



TO TIMER

P5901-P5902
1 REMOCON
2 P5
3 P7
4 P8
5 ACSS IN
6 P9
7 P10
8 GND
9 +2.9VA
10 -2.9VA
11 GND

P5902-P5901

P5902-P5901
1 REC 5.1V
2 KEY RTN 1
3 KEY RTN 2
4 9G
5 8G
6 7G
7 6G
8 5G
9 4G
10 3G
11 2G
12 1G
13 REC 5.3VA
14 P1
15 P2
16 P3
17 P4
18 KEY Vref
19 P5

P6M02-PM602

P6M02-PM602
1 12VA
2 Y/C V IN
3 GND
4 LINE V OUT
5 CANAL CTL DATA
6 LINE A OUT
7 GND
8 PRE DET H

P6M01-PM601

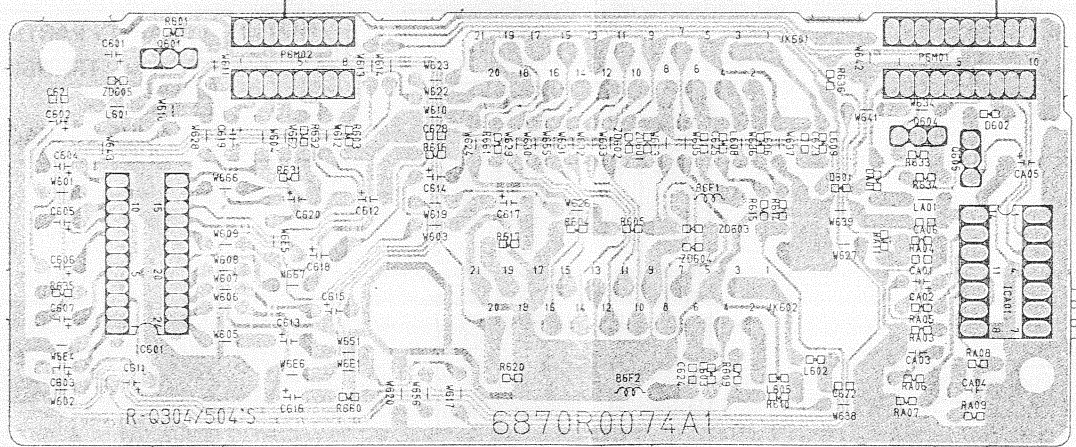
P6M01-PM601
1 5.3VA
2 12VA
3 TU V OUT
4 GND
5 TU A OUT
6 CANAL CTL DATA
7 AUDIO IN
8 SCART H
9 VPS/PDC DATA
10 VPS/PDC CLK

Q804
Q805
C829
R812
Q806
L801
R811
R816
C816
C815
C814
C813
C812
C811
C822

ADJ
AFC
AGC
AUD
CAR
COL
DEV
EE
ENV
FRE
LEV
LUM
OSC
PB
PG
REC
SIF
VOL

(Solder Side)

2. Premiere P.C.Board



(Solder Side)

TO DECK

P2J02
1 PB AUDIO
2 GND
3 REC AUDIO
4 GND
5 FIE HEAD
6 GND
7 CTLH
8 CTLH
9 LOADH
10 LOADH
11 N.C
12 5.3VA

P5J00

P5J00
1 MODE C
2 MODE B
3 MODE A
4 MODE COMMON
5 TAP REEL
6 SUPPLY REEL
7 CST SW
8 GND
9 SUPPLY SENS
10 TAP SENS
11 C.M.GND
12 CAPH

P2J01

P2J01
1 C.F.G
2 REG 5.3VA
3 14V
4 CAP CTL
5 GND
6 N.C
7 DRUM CTL
8 10VA
9 D.M.GND
10 D.F.GH
11 D.P.GH
12 D.P.GH

TO PRE-AMP

P3001-P3001
1 PB-Y
2 GND
3 PB-C
4 REC-C
5 REC-Y
6 SV
7 HSW
8 REC STARTY
9 ENV DET
10 TRICKY
11 H.ASW
12 ENV COMP

TO POWER

P4101-P1401
1 PWR CTL "H"
2 GND
3 6VA
4 AC 1.7VA
5 AC 1.7VA
6 5.3V
7 GND
8 12VA
9 13V
10 GND
11 GND
12 12VA
13 11VA
14 UNREG 40VA
15 GND

NOTE) : SAFETY PARTS
 : MEASUREMENT POINT
 : ADJUSTMENT POINT
 Emitter : TRANSISTOR
 Collector
 Base

5

4

3

2

1

A

B

C

D

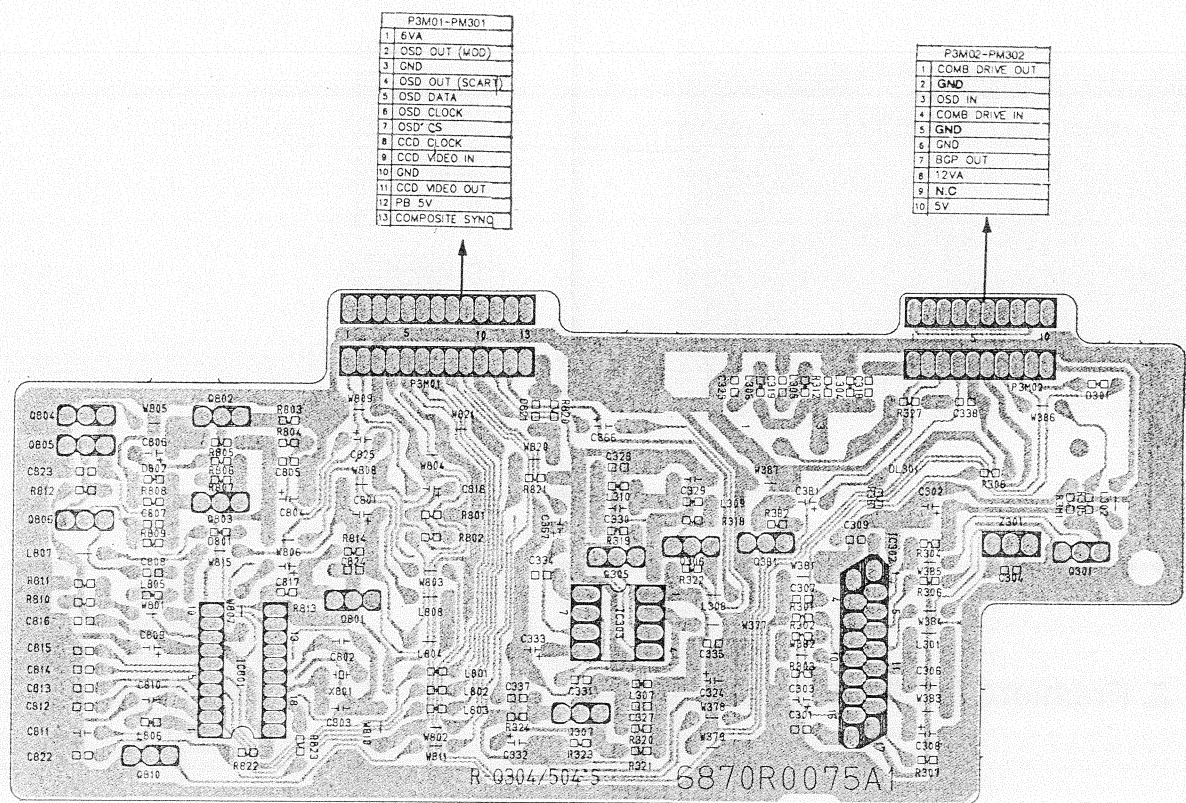
E

F

G

H

3. Y/C P.C.Board

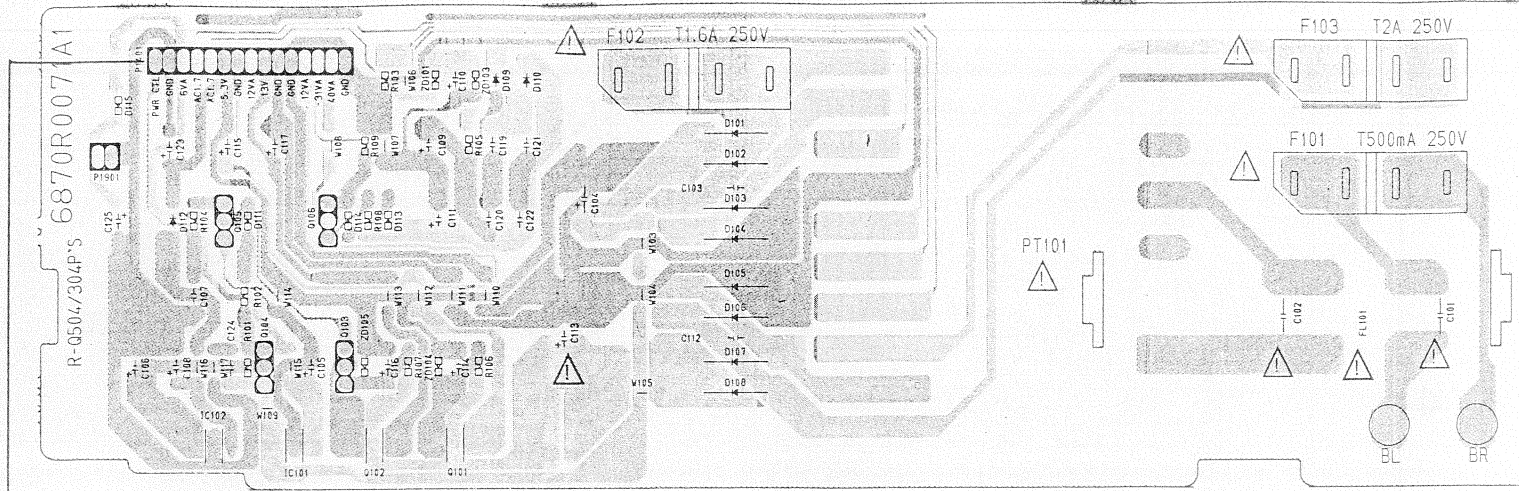


(Solder Side)

ABBREVIATIONS	
ADJ	: ADJUSTMENT
AFC	: AUTOMATIC FREQUENCY CONTROL
AGC	: AUTOMATIC GAIN CONTROL
AUD	: AUDIO
CAR	: CARRIER
COL	: COLOR
DEV	: DEVIATION
EE	: Electric to Electric
ENV	: ENVELOP
FRE	: FREQUENCY
LEV	: LEVEL
LUM	: LUMINANCE
OSC	: OSCILLATION
PB	: PLAYBACK
PG	: PULSE GENERATOR
REC	: RECORDING
SIF	: SOUND INTERMEDIATE FREQUENCY
VOL	: VOLTAGE

LOCA NO.	Position	LOCA NO.	Position
IC201	IC	Q318	1A
IC301	2B	Q319	1B
IC302	3K	Q321	1B
IC303	3J	Q381	4J
IC401	4B	Q401	4B
IC501	5D	Q402	4B
IC502	5F	Q403	3B
IC503	4D	Q404	4B
IC504	4A	Q405	4A
IC601	2E	Q501	5E
IC701	5B	Q502	3B
IC801	3I	Q504	3C
ICA01	2H	Q509	3C
Q201	2C	Q601	3E
Q202	2C	Q604	3G
Q203	1C	Q605	3G
Q204	1C	Q701	5C
Q205	2C	Q702	5C
Q206	1D	Q703	5A
Q207	2C	Q704	5B
Q208	2C	Q705	5B
Q209	2C	Q706	5B
Q301	4K	Q707	5B
Q305	3J	Q720	5A
Q306	4J	Q721	5A
Q308	2A	Q801	3I
Q309	2B	Q802	4I
Q312	3A	Q803	4I
Q313	3A	Q804	4H
Q314	3B	Q805	4H
Q315	3B	Q806	4H
Q316	3A	Q810	3I
Q317	1A		

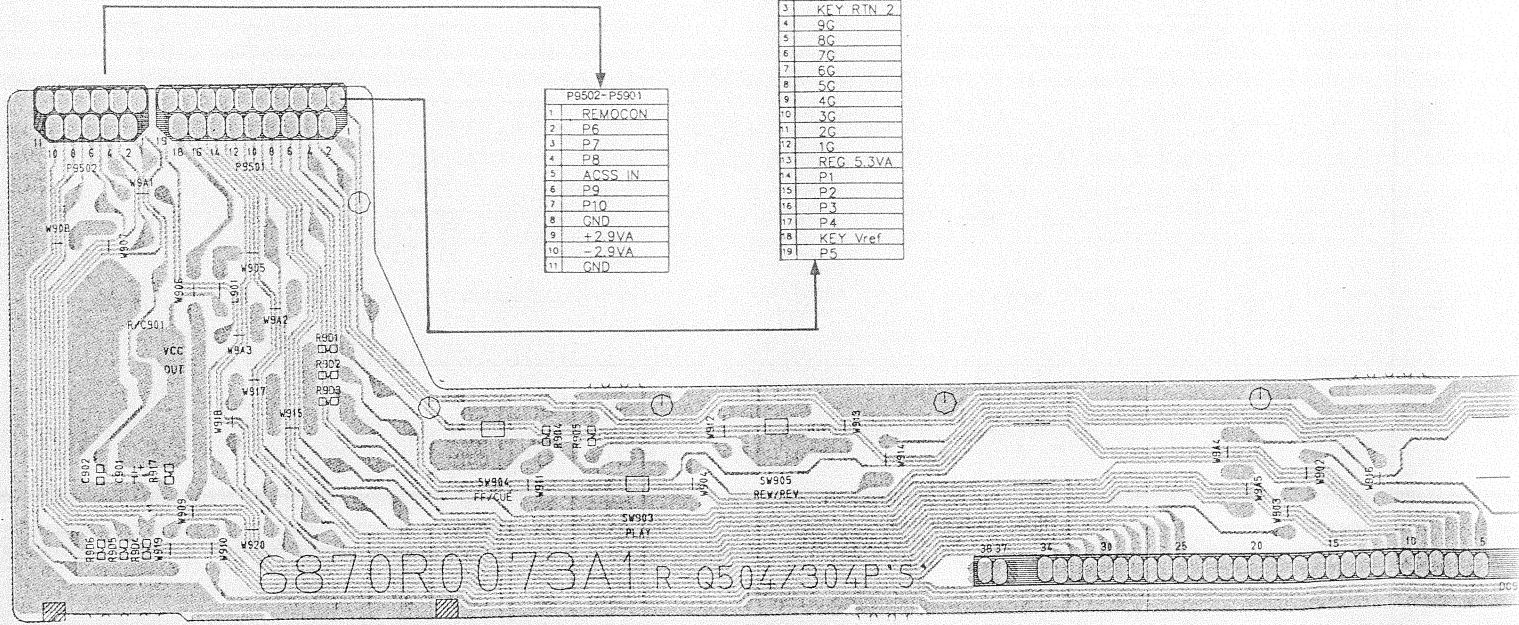
4. Power P.C.Board



(Solder Si

P1401-P4101	
1	PWR CTL "H"
2	GND
3	6VA
4	AC 1.7VA
5	AC 1.7VA
6	5.3V
7	GND
8	12VA
9	13V
10	GND
11	GND
12	12VA
13	-31VA
14	UNREG 40VA
15	GND

6. Timer P.C.Board

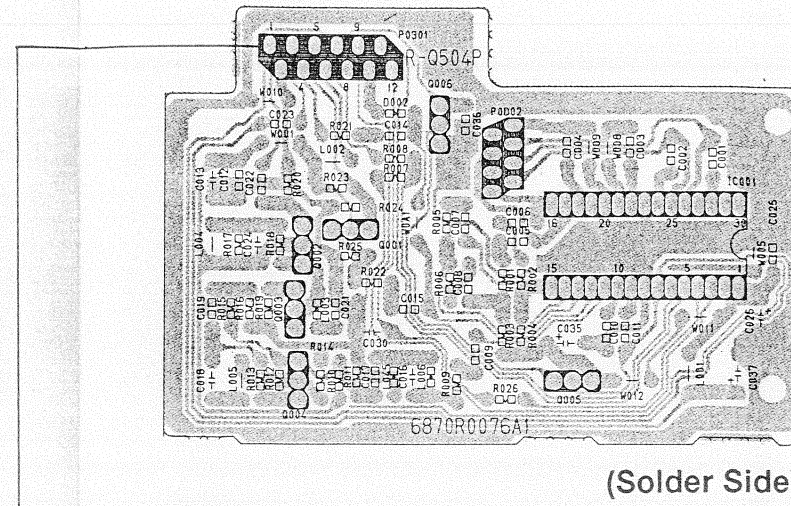


P5502-P5901	
1	REMOCON
2	P6
3	P7
4	P8
5	ACSS IN
6	P9
7	P10
8	GND
9	+2.9VA
10	-2.9VA
11	GND

P5901-P5902	
1	REG 5.1V
2	KEY RTN 1
3	KEY RTN 2
4	9G
5	8G
6	7G
7	6G
8	5G
9	4G
10	3G
11	2G
12	1G
13	REG 5.3VA
14	P1
15	P2
16	P3
17	P4
18	KEY Vref
19	P5

H I J K A B C D

7. Junction P.C.Board

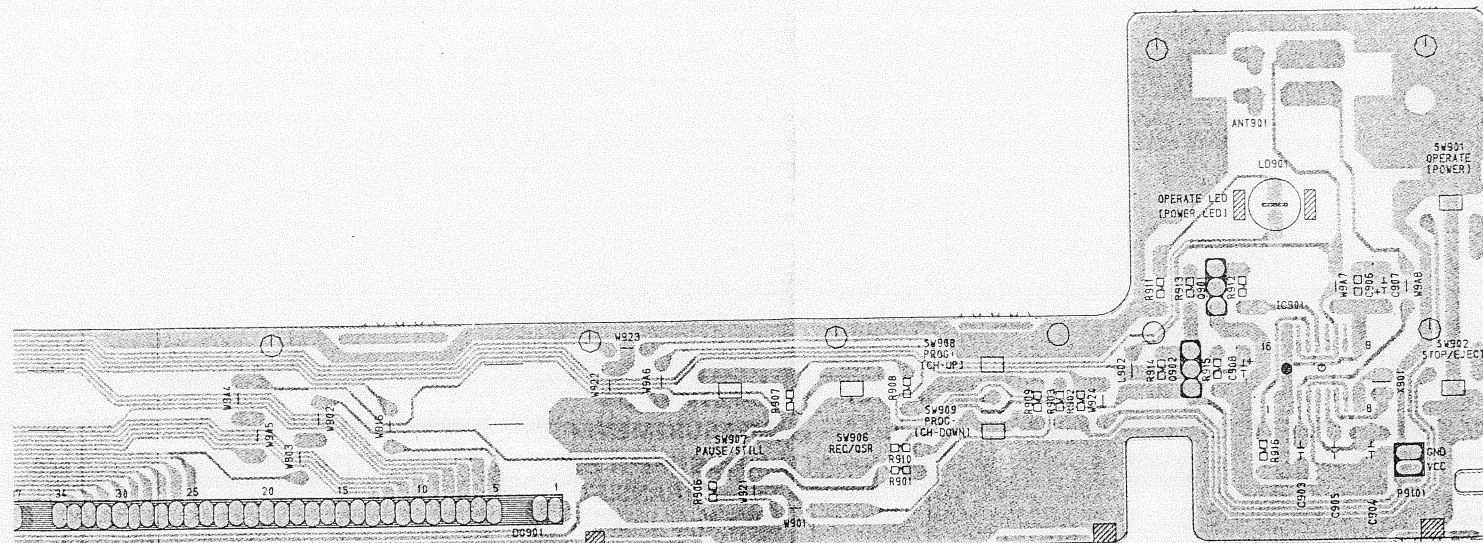


(Solder Side)

	P0301-P3001
1	PB-Y
2	GND
3	PB-C
4	REC-C
5	REC-Y
6	5V
7	H/SW
8	REC START "H"
9	ENV-DET
10	TRICK "H"
11	H/A/SW
12	ENV-COMP

(Solder Side)

LOCA NO.	Position
IC001	5G
IC101	4A
IC102	4A
Q001	4F
Q002	4F
Q003	4F
Q004	4F
Q005	4G
Q006	5F
Q101	4B
Q102	4B
Q103	4B
Q104	4A
Q105	4A
Q106	4B
Q901	1G
Q902	1F



(Solder Side)

CONTENTS

FRONT LOADING MECHANISM DISASSEMBLY

- Front Loading Mechanism Parts Location 4-3
- 1. Front Loading Mechanism Assembly ... 4-4
- 2. PCB Assembly ... 4-5
 - 2-1. PCB Assembly(R) ... 4-5
 - 2-2. PCB Assembly(L) ... 4-5
- 3. Top Plate ... 4-5
- 4. Carrier Bracket Assembly ... 4-6
 - 4-1. Carrier Bracket Assembly ... 4-6
 - 4-2. Cassette Opener ... 4-6
 - 4-3. Lid Opener ... 4-6
 - 4-4. Detect Lever and Detect Spring ... 4-6
 - 4-5. Bracket Support Assembly ... 4-7
 - 4-6. Carrier Bracket Assembly ... 4-7
- 5. Cassette Guide ... 4-7
- 6. Bracket Assembly Side ... 4-8
- 7. Bracket Assembly(L),(R) ... 4-8
- 8. Door Opener ... 4-8
- 9. Drive Gear Assembly ... 4-8
 - 9-1. Drive Gear Assembly ... 4-8
 - 9-2. Cushion Spring ... 4-8
 - 9-3. Cap-D ... 4-8
 - 9-4. Spring C.C ... 4-8
 - 9-5. Gear C ... 4-8
 - 9-6. Gear R ... 4-9
 - 9-7. Spring R ... 4-9
 - 9-8. Gear L ... 4-9
 - 9-9. Spring L ... 4-9
 - 9-10. Switch Lever ... 4-9

DECK MECHANISM DISASSEMBLY

- Deck Mechanism Parts Location ... 4-10
- 1. Auto Head Cleaner Assembly ... 4-11
- 2. Drum Assembly and Drum Base ... 4-11
- 3. Upper and Lower Drum Assembly ... 4-11
- 4. A/C Head Assembly ... 4-12
- 5. Pinch Lever Assembly ... 4-12
- 6. Loading Motor Assembly ... 4-12
- 7. Take Up Lever ... 4-13
- 8. Take Up Arm Assembly ... 4-13
- 9. Pinch Gear ... 4-14
- 10. P4 Assembly ... 4-14
- 11. Full Erase Head Assembly ... 4-14
- 12. P1 Assembly ... 4-14
- 13. Tension Arm Assembly ... 4-14
- 14. Supply Soft/Supply Main Take-up
Soft/Take-up Main Brake Assembly ... 4-15
- 15. Bracket F/R Assembly ... 4-15

- 16. Supply Reel Assembly ... 4-15
- 17. Idler Gear(A),(B) ... 4-16
- 18. Pulley Gear Assembly ... 4-16
- 19. Bracket Bottom Assembly ... 4-16
- 20. Junction PCB Assembly ... 4-16
- 21. Capstan Motor/Brake Assembly ... 4-17
- 22. Function Plate ... 4-17
- 23. Ratchet Lever Assembly ... 4-18
- 24. Cam Gear, Rack T, Rack F.L ... 4-18
- 25. PC Gear ... 4-19
- 26. P2 and P3 Slant Assembly ... 4-19
- 27. Loading Gear Assembly ... 4-20
- 28. Tension Lever Assembly ... 4-20
- 29. Clutch Gear Assembly ... 4-20
- 30. Take Up Reel Assembly ... 4-20

MECHANISM ADJUSTMENT

- Tools and Fixtures for Deck ... 4-21
- 1. Mechanism State Switch
(Mode Switch) Check ... 4-22
- 2. Preparation for Adjustment
(To set VCR to the Loading State
without inserting a cassette) ... 4-23
- 3. Reel Table Height Adjustment ... 4-23
- 4. Tension post position and Tension
Adjustment ... 4-24
- 5. Checking Torque ... 4-25
- 6. Guide Post Height Adjustment ... 4-26
- 7. Guide Roller Height Adjustment ... 4-27
- 8. Audio Control(A/C) Head
Adjustment ... 4-29
- 9. X-Value Adjustment ... 4-30
- 10. Adjustment after Replacing Drum
Assembly ... 4-31
- 11. Maintenance/Inspection Procedure ... 4-32

MECHANISM TROUBLESHOOTING GUIDE

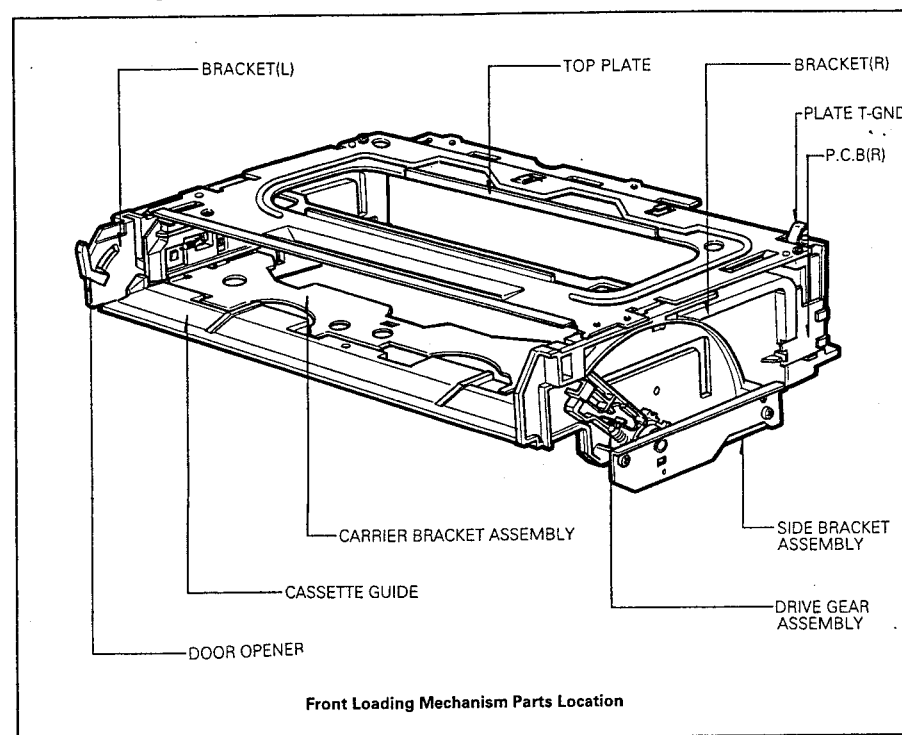
- 1. Deck Part ... 4-35
- 2. Front Loading Mechanism Part ... 4-39

EXPLODED VIEW

- 1. Moving Mechanism Section(I) ... 4-41
- 2. Moving Mechanism Section(II) ... 4-43
- 3. Front Loading Mechanism Section ... 4-45

FRONT LOADING MECHANISM DISASSEMBLY

• Front Loading Mechanism Parts Location



Front Loading Mechanism Parts Location

- 1. Component list below will be described as if the top and bottom covers and the front panel have already been removed.
- 2. P.C.B Assembly
- 3. Top Plate
- 4. Carrier Bracket Assembly
- 5. Cassette Guide
- 6. Side Bracket Assembly
- 7. Bracket(L), (R)
- 8. Door Opener
- 9. Drive Gear Assembly

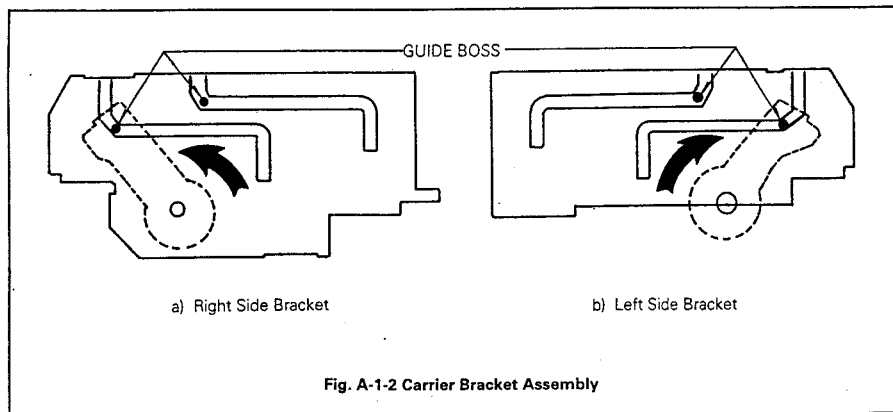
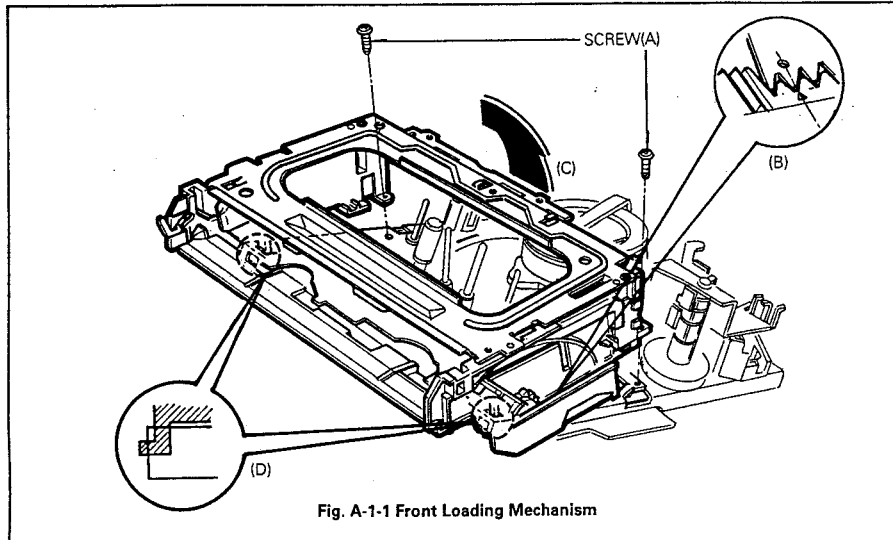
1. Front Loading Mechanism Assembly (Fig. A-1-1)

- 1) Remove the Top and Bottom Covers and the Front panel.
- 2) Unplug the connector.
- 3) Remove two screws(A).
- 4) Lift up the Front Loading Mechanism in the direction of arrow(C).

* NOTE

- 1) When disassembling and reassembling
① Give special attention to removal, because two tabs(D) are engaged.

- ② Make sure that Bosses of Bracket(L),(R) are properly engaged in the holes of the chassis.
- ③ To reassemble Front Loading Mechanism, the Drive Gear Assembly should be turned in a counterclockwise as shown in Fig. A-1-2 so that the Rack Gear N.D of Front Loading Mechanism Assembly is meshed into Rack Gear F.L of Deck Mechanism Assembly correctly as shown in Fig. A-1-1.(B).



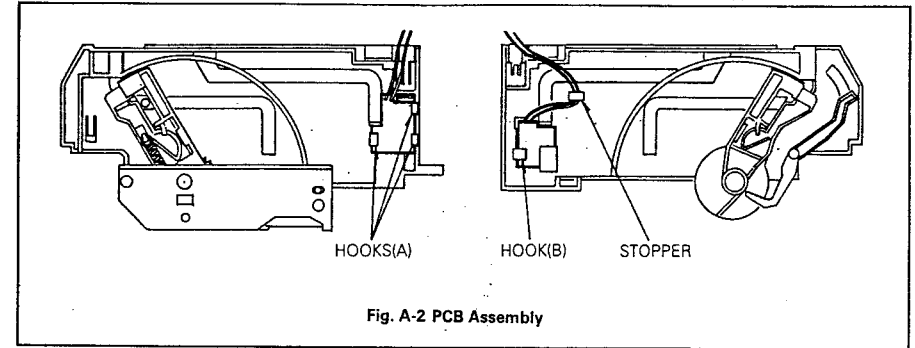
2. PCB(Printed Circuit Board) Assembly

2-1. P.C.B Assembly(R)(Fig. A-2)

- 1) Remove the PCB Assembly(R) by pushing three Hooks (A) outward.
- 2) Release the Lead wire from stoppers.

2-2. PCB Assembly(L).(Fig. A-2)

- 1) Remove the PCB Assembly(L) by pushing the Hook(B) outward.
- 2) Release the Lead Wire from stoppers.

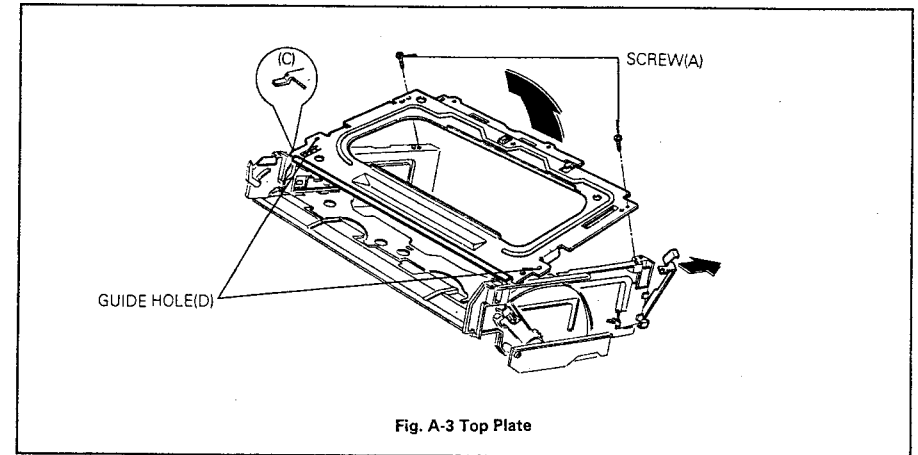


3. Top Plate(Fig. A-3)

- 1) Remove two screws(A).
- 2) Push the upper part of Top plate Ground and then lift up the Top Plate.

* NOTE

- 1) When reassembling, be certain that the tabs(C) of Top Plate is in both Bracket(L),(R).
- ① Then align the guide holes(D) of Top Plate with Bosses of side Bracket(L),(R).



4. Carrier Bracket Assembly

4-1. Carrier Bracket Assembly(Fig. A-4-1)

- 1) Remove the Carrier Bracket Assembly by moving it in the direction of arrow(C).

* NOTE

- 1) When reassembling, be sure that parts(A) of Carrier Bracket Assembly are seated in parts(B) of Bracket(L),(R).

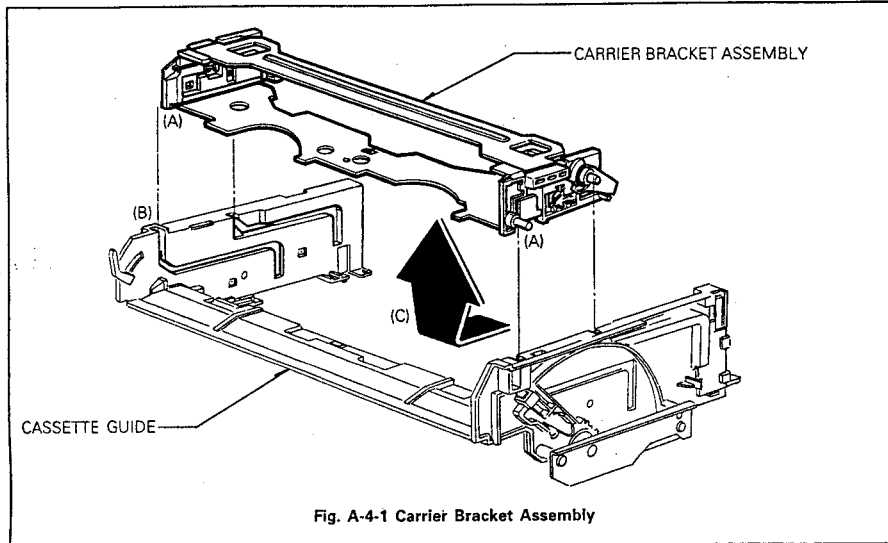


Fig. A-4-1 Carrier Bracket Assembly

4-2. Cassette Opener(Fig. A-4-2)

- 1) Release the spring O.C from the Hook(A) and then release it from Hook(C) of cassette opener.
- 2) Remove the cassette opener by releasing the Hook(B) from the Holder(R).

4-3. Lid Opener(Fig. A-4-2)

- 1) Remove the lid opener by pushing it outward.

* NOTE

- 1) When reassembling, seat the upper part of the lid opener in the grooved of Holder(R) and push it inward.

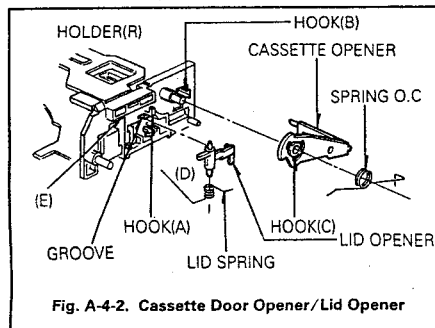


Fig. A-4-2. Cassette Door Opener/Lid Opener

4-4. Detect Lever and Detect Spring

- 1) Remove the spring detect.
- 2) Lower the side(A) of Detect Lever and then remove the Detect Lever by pushing it outward.

* NOTE

- 1) When reassembling, make sure that the part(C) of Detect Lever set in the part(B) of Holder(R).

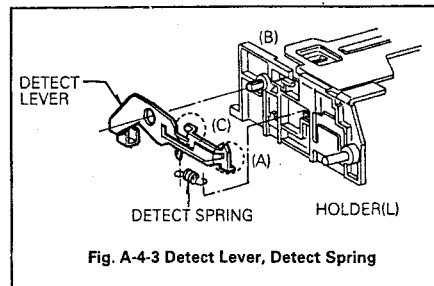


Fig. A-4-3 Detect Lever, Detect Spring

4-5. Bracket Support(Fig. A-4-4)

- 1) Take the Support Bracket out by releasing hooks(A),(B).

* NOTE

- 1) When disassembling and reassembling, be careful because heavy force can damage the hooks.

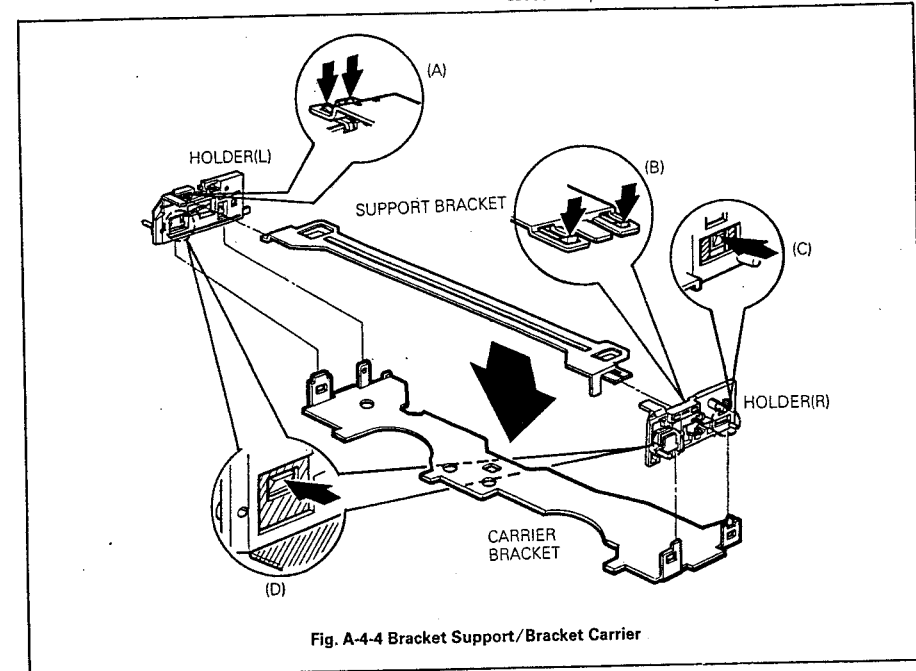


Fig. A-4-4 Bracket Support/Bracket Carrier

4-6. Carrier Bracket Assembly(Fig. A-4-4)

- 1) Remove the Carrier Bracket by releasing hooks(C),(D).

5. Cassette Guide(Fig. A-5)

- 1) Remove the Switch Spring with the Front Loading Mechanism Assembly turned over.
- 2) Push two hooks(B) outward.
- 3) Remove the Cassette Guide by pushing two hooks(A) outward(if one is removed, the other will be easy to remove).

* NOTE

- 1) When reassembling
 - ① Seat projections(E) of Cassette Guide in holes of Bracket Assembly(L),(R) and then engage the Hook(A).
 - ② After finishing previous step, fix the Cassette Guide to the Bracket Assembly(L),(R) by pushing two hooks(B) inward.

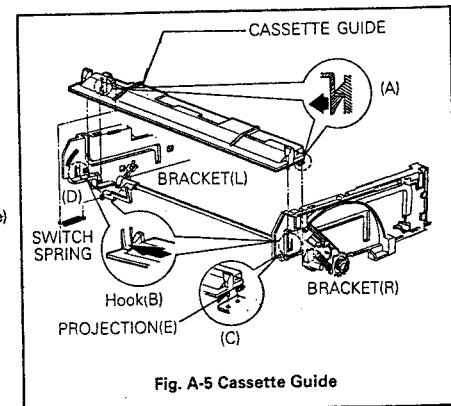


Fig. A-5 Cassette Guide

- 1) Remove two screws(A) and then remove the Side Bracket Assembly and the Rack Gear N.D.

1) When reassembling

- ① Turn the Drive Gear Assembly in the direction of arrow (C).
- ② Reassemble the Rack Gear N.D. to the Side Bracket Assembly, as shown in Fig. A-6-2, and then reassemble




7. Bracket Assembly(L),(R)(Fig. A-7)

- 1) Separate the Bracket Assembly(L),(R) from the Gear Assembly Drive.

1) When reassembling, seat the shaft in the part(A) of Bracket Assembly(L),(R).

1) Remove the Door Opener by pushing Hook(A) outward.

1) When reassembling, seat the part(B) of Door Opener in the hole() of Bracket(L).



9-1. Drive Gear Assembly(Fig. A-9-1)

- 1) Remove the Drive Gear Assembly from the Bracket Assembly(L),(R).

1) Remove the cushion spring from the Gear R .

- 1) Remove the Cap-D by lifting it up.

- 1) Remove the Spring C.C from the Gear R.

- 1) Remove the Gear C by lifting up when the projection of Gear C is aligned with the hole of Gear R while rotating the Gear C in the counterclockwise direction.



- 1) When reassembling, seat the projections of Gear R in the holes of Gear C when the projection of Gear R is aligned with the hole of Gear C, and then keep the Gear C turned in the clockwise direction.

1) Lift up the Gear R from the Shaft.

1) Remove the Spring R by releasing Hooks.

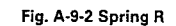
1) When reassembling, be certain Spring R in the part(A) of Gear R.

- 1) Remove the Gear L from the shaft.

1) Remove the Spring L by releasing Hooks from the Gear L.

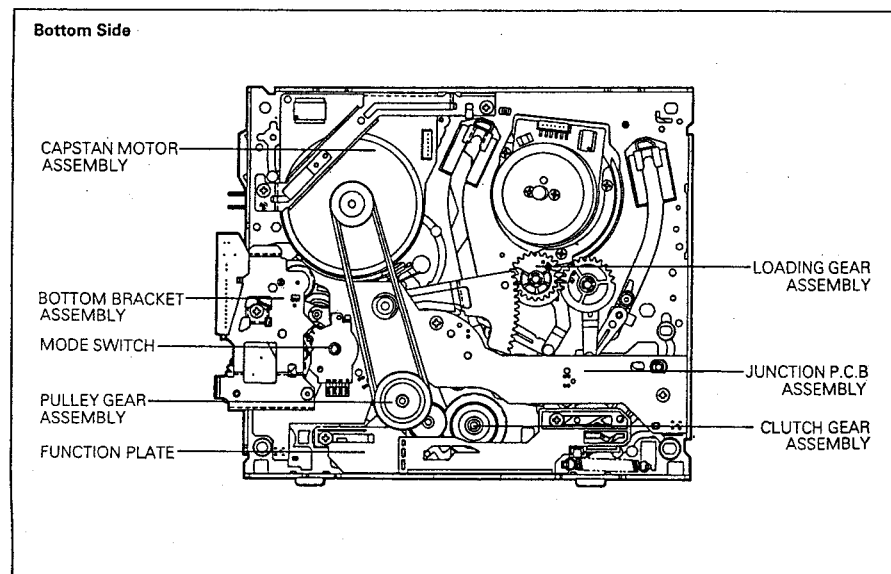
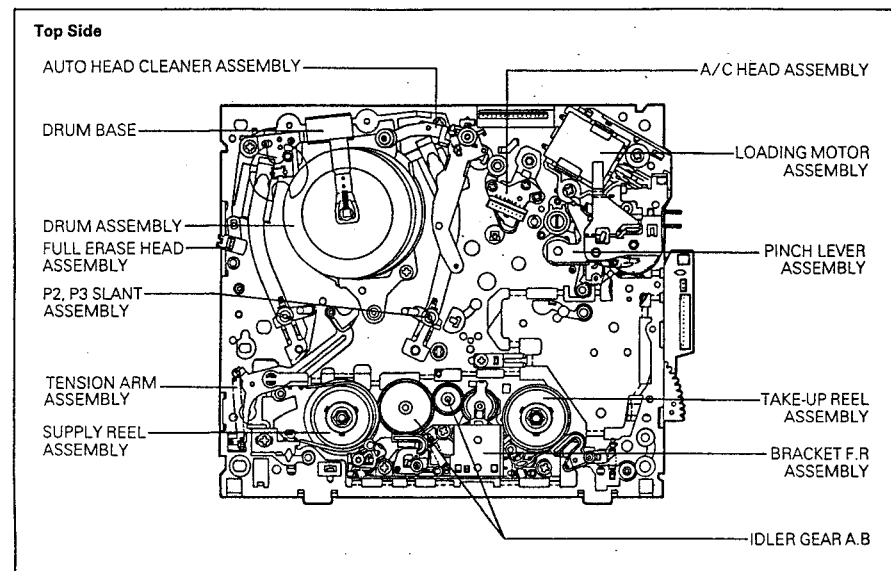
* **NOTE:**(Refer to the Spring R Section)

- 1) Remove the Switch Lever from the shaft.



DECK MECHANISM DISASSEMBLY

• Deck Mechanism Parts Location

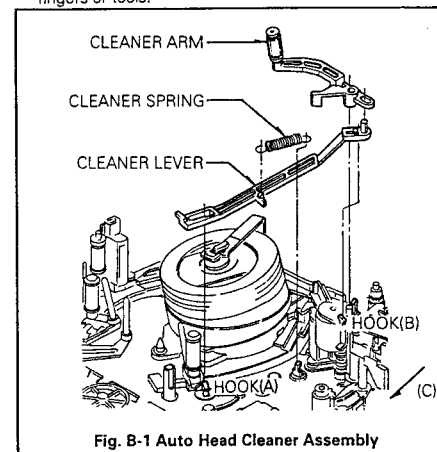


1. Auto Head Cleaner Assembly(Fig. B-1)

- 1) Remove the Cleaner Spring.
- 2) Remove the Cleaner Arm by pushing Hook(B) inward and then remove Cleaner Lever by pushing it in the direction of arrow(C).

* NOTE

- 1) When reassembling, do not touch the Video Head Tip with fingers or tools.



2. Drum Assembly and Drum Base(Fig. B-2)

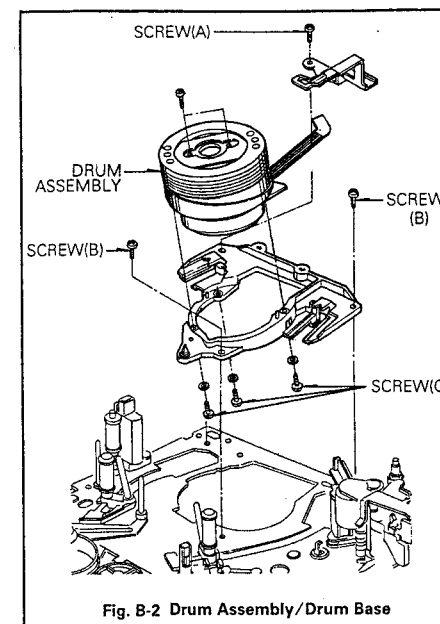
- 1) Remove the Auto Head Cleaner Assembly.
- 2) Unplug the connector with the Deck Mechanism Assembly turned over.
- 3) Loosen the screw(A) and then lift up the Drum Brush.
- 4) Remove two screws(B) and then lift up the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
- 5) Separate the Drum Assembly from the Drum Base by Loosening three screws(C) on the back of Drum Base.

* NOTE

- 1) When disassembling and reassembling
 - ① Do not touch the Video Head tip with fingers or tools. (Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly)
 - ② After reinstalling the Drum Brush, the Drum Brush should be aligned with the center of vertical axis of Drum Assembly.
 - ③ After completing the reassembly, adjust the transportation system and the Servo P.G.

3. Upper and Lower Drum Assembly (Fig. B-3)

- 1) Remove the Drum Assembly and Drum Base from the

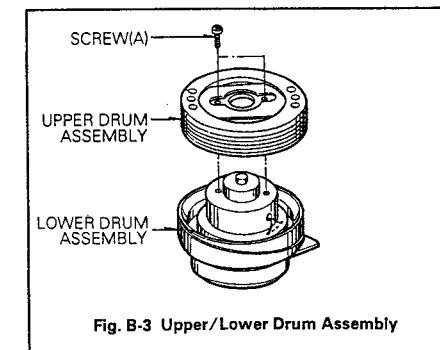


Deck Mechanism Assembly.

- 2) Separate the Drum Assembly from the Drum Base.
- 3) Remove two screws(A).
- 4) Separate the upper Drum Assembly from the Lower Drum Assembly.

* NOTE

- 1) When disassembling and reassembling
 - ① Do not touch the Video Head Tip with fingers or tools.
 - ② Make sure that the color(white) marked on the P.C.B of the upper Drum should coincide with the color(Green) marked on the Flange Assembly.

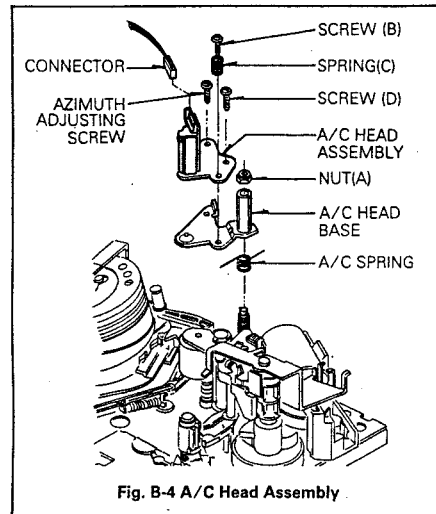


4. A/C(Audio/Control) Head Assembly (Fig.B-4)

- 1) Unplug the connector
- 2) Remove the Nut(A), and then lift up the A/C Head Assembly.
- 3) Remove the Azimuth Adjusting Screw.
- 4) Remove two screws(B),(D) and then separate the A/C Head Assembly from the Base A/C Head Assembly.

* NOTE

- 1) When disassembling
 - ① First of all, release the spring A/C.
 - ② Do not touch the A/C Head Tip with fingers or tools.
 - ③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

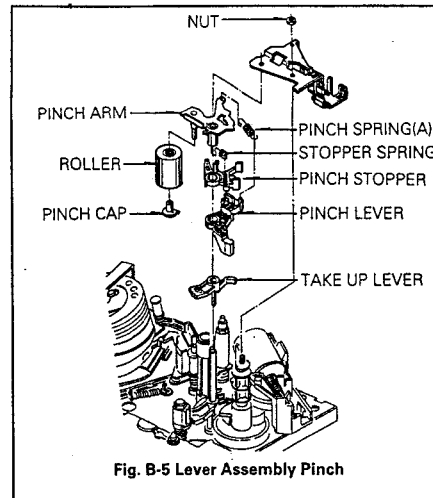


5. Pinch Lever Assembly(Fig. B-5)

- 1) Remove one Nut, and then remove the Dew Bracket.
- 2) Lift up Pinch Lever Assembly.
- 3) Remove the Pinch Spring, and remove the Pinch Lever.
- 4) Remove the Stopper Spring and remove the Pinch Stopper by lifting it up when the Hook of Pinch Stopper is aligned with the hole of Pinch Arm while rotating the Pinch Stopper in the counterclockwise direction.
- 5) Remove the Pinch Cap, and then remove the Pinch Roller Assembly.

* NOTE

- 1) When disassembling and reassembling
 - ① Be careful not to get any foreign substance on the Roller.
 - ② When disassembling the Pinch Cap, be careful not to damage the Pinch Arm.

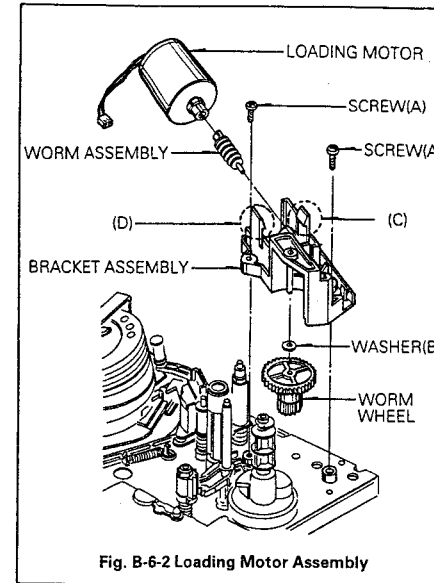
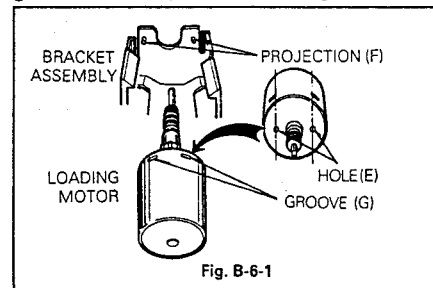


6. Loading Motor Assembly(Fig. B-6-1, B-6-2)

- 1) Remove the Dew Bracket.
- 2) Unplug the connector from the Junction P.C.B Assembly.
- 3) Remove two screws(A).
- 4) Remove the worm wheel by pushing it down.
- 5) Remove the Loading Motor Assembly by pushing(C) and (D) outward.
- 6) Remove the worm Gear Assembly from the Loading Motor Assembly by pushing it.

* NOTE

- 1) When reassembling
 - ① Make sure that the worm assembly is seated in the axis of Loading Motor.
 - ② Two grooves(G) of Loading Motor should be turned up and two projections(F) of Bracket Assembly should be seated in each at the two holes(E)(Fig. B-6-1).
 - ③ Take notice of the polarity of the Loading Motor.



7. Take Up Lever(Fig. B-7)

- 1) Remove the Dew Bracket.
- 2) Remove the Pinch Lever Assembly.
- 3) Remove the Take-Up Lever by pushing the hook(A) outward.

* NOTE

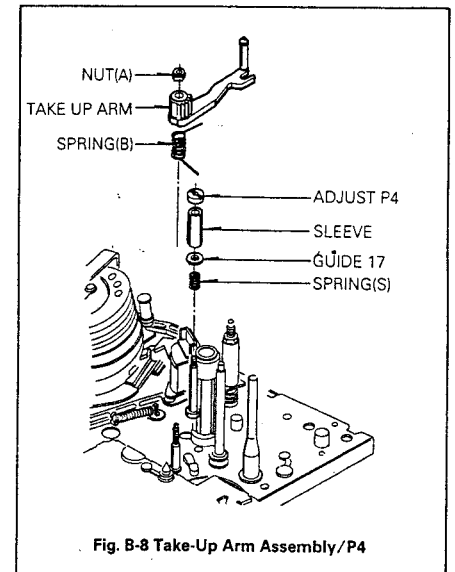
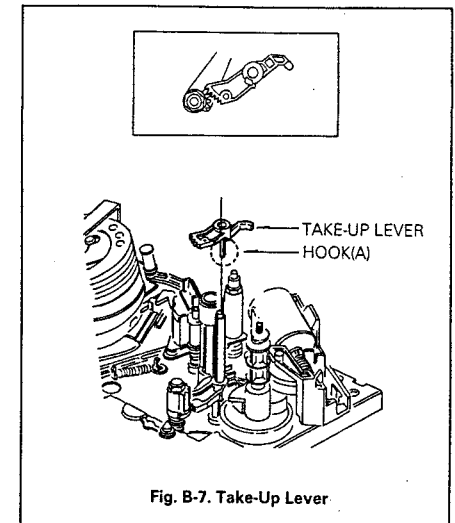
- 1) When disassembling and reassembling
 - ① When disassembling the Take-Up Lever, be careful not to break the Hook(A).
 - ② When reassemble the Take-Up Lever, align the appendant Gear of Lever Take-Up with the appendant Gear of Take-up Arm
 - ③ Reassemble the Take-Up Lever completely by hooking (A).

8. Take Up Arm Assembly(Fig. B-8)

- 1) Remove the Dew Bracket, Pinch Gear, and the Take-Up Lever
- 2) Remove one Nut(A).
- 3) Remove the Take-Up Arm Assembly by lifting it up.
- 4) Remove the spring(B).

* NOTE

- 1) When reassembling
 - ① Align the Gear of Take-Up Arm with the Gear of Take-Up Lever.



9. P4 Assembly(Fig. B-8)

- 1) Remove the Adjust P4.
- 2) Remove the Sleeve.
- 3) Remove the Guide 17.
- 4) Remove the Spring.

10. Pinch Gear

- 1) Remove one Nut(A) and then remove the Dew Bracket.
- 2) Remove the Pinch Lever Assembly by lifting it up.
- 3) Remove the Loading Motor Assembly.
- 4) Remove the Take Up Lever.
- 5) Remove the Pinch Gear Assembly.

* NOTE

- 1) When reassembling, align the hole(A) of Pinch Gear with the hole of chassis, and the hole(C) of Pinch Gear with the groove(D) of the P.C.Gear. Hole(E) of chassis should be aligned with the hole of P.C.Gear.

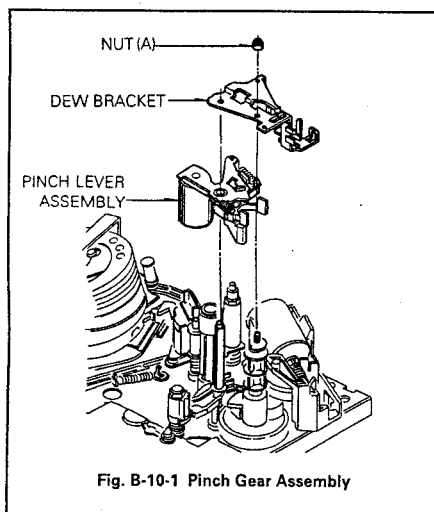


Fig. B-10-1 Pinch Gear Assembly

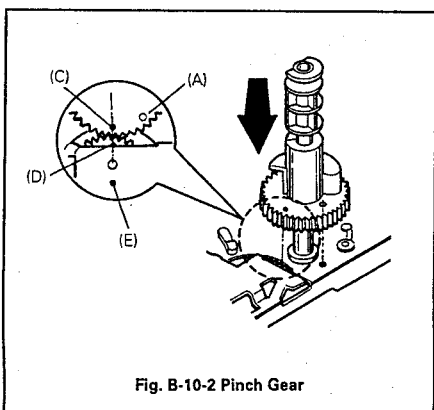


Fig. B-10-2 Pinch Gear

11. FE(Full Erase) Head Assembly(Fig. B-11)

- 1) Unplug the connector.
- 2) Remove one screw(A), and then remove the FE Head.

* NOTE

- 1) When disassembling and reassembling
- ① Do not touch the Video Head Tip with fingers or tools.

12. P1 Assembly(Fig. B-11)

- 1) Remove the Adjust P1.
- 2) Remove the Guide 17.
- 3) Remove the Roller.
- 4) Remove the Sleeve.
- 5) Remove the Guide 17.
- 6) Remove the Spring.

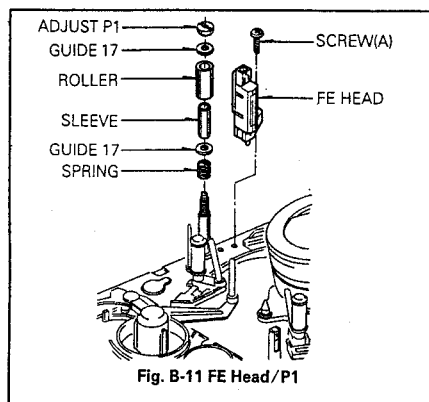


Fig. B-11 FE Head/P1

13. Tension Arm Assembly(Fig. B-13)

- 1) Remove one screw(C).
- 2) Remove the Tension Spring.
- 3) Remove the Tension Arm Assembly by pushing hooks outward with the Deck Mechanism Assembly turned over.
- 4) Remove the Tension Band Assembly from the Tension Arm by pushing Hooks of Holder(A).

* NOTE

- 1) When disassembling and reassembling, give special attention to the disassembling and reassembling of Tension Arm Assembly, because the Tension Band is interposed between the Supply Reel and the Soft Brake.

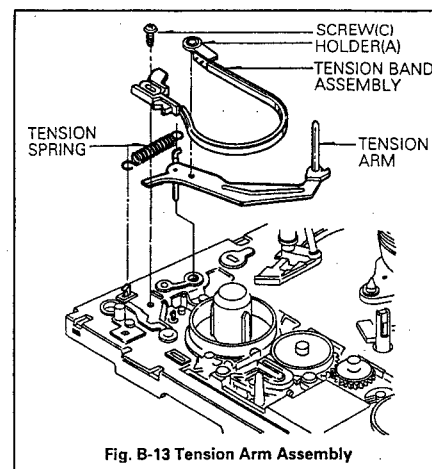


Fig. B-13 Tension Arm Assembly

14. Supply Soft/Supply Main/Take-Up Soft/Take-Up Main Brake Assembly

- 1) Supply Soft Brake(SSB)
 - ① Remove the SSB Spring.
 - ② Remove the SSB.
- 2) Supply Main Brake(SMB)
 - ① Remove the SMB Spring.
 - ② Remove the SMB.
- 3) Take Up Soft Brake(TSB)
 - ① Remove the TSB Spring.

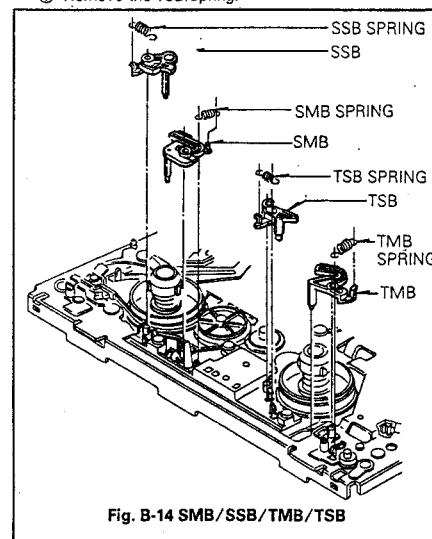


Fig. B-14 SMB/SSB/TMB/TSB

- ② Remove the TSB.
- 4) Take-Up Main Brake(TMB)
 - ① Remove the TMB Spring.
 - ② Remove the TMB.

15. Bracket F/R(FF/Rewind) Assembly(Fig. B-15)

- 1) Remove the TMB.
- 2) Remove the Washer(A), and then remove the Gear F.R.
- 3) Remove three screws, and then remove Bracket F/R Assembly from the Deck Mechanism Assembly.
- 4) Remove the Washer(B), and spring Up/D, and then remove the Gear Up/D.
- 5) Remove the shaft(C), and then remove the Arm F.R, Lever F.R and Spring F.R.

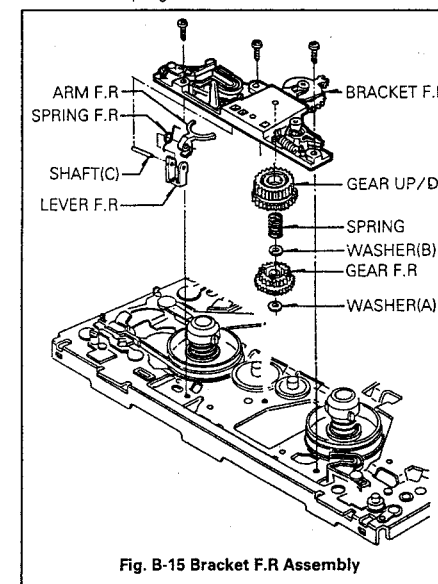


Fig. B-15 Bracket F.R Assembly

16. Supply Reel Assembly(Fig. B-16)

- 1) Remove the Tension Band Assembly.
- 2) Remove the Bracket F/R.
- 3) Lift up the Supply Reel Assembly from the Deck Mechanism Assembly.
- 4) Separate the Reel Cap from the Supply Reel by taking it out of Hooks(A).

* NOTE

- 1) When reassembling
- ① Make sure that the Supply and Take Up Reel are not exchanged.
- ② After reinstalling the Supply Reel Assembly, Adjust the Tension.

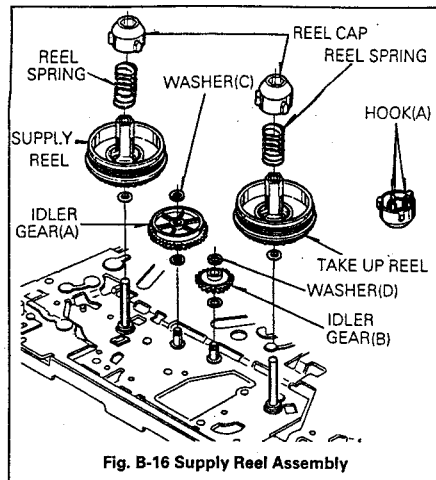


Fig. B-16 Supply Reel Assembly

17. Idler Gear(A), (B)(Fig. B-16)

- 1) After removing the Supply Reel, and supply Main Brake Assembly, remove the washer(C) and remove the Idler Gear(A).
- 2) Remove the Washer(D) and remove the Idler Gear(B).

18. Pulley Gear Assembly(Fig. B-18)

- 1) Turn over the Deck Mechanism Assembly.
- 2) Remove the Capstan Belt.
- 3) Remove the Washer(A) and lift up the Pulley Gear.

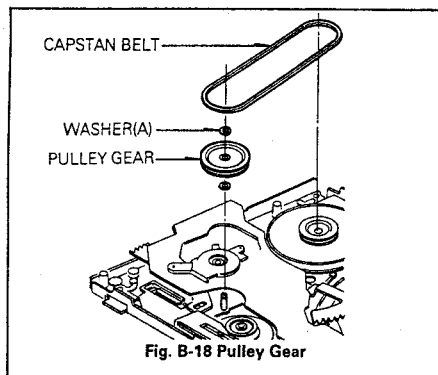


Fig. B-18 Pulley Gear

19. Bracket Bottom Assembly(Fig. B-19)

- 1) Remove one screw(A).
- 2) Remove one Hexagonal Nut, and then lift up the Bracket Bottom Assembly.
- 3) Remove one Washer, and lift up the Ratchet Gear 1.

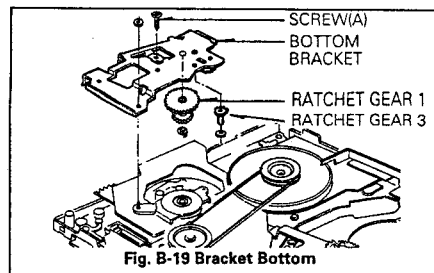


Fig. B-19 Bracket Bottom

- 4) Remove the washer, and then remove Ratchet Gear 3 from the Bottom Bracket.

20. Junction PCB(Printed Circuit Board) Assembly (Fig. B-20-1)

- 1) Remove the Bottom Bracket Assembly.
- 2) Remove two screws(A),(B) and then remove the Junction P.C.B Assembly.
- 3) Remove the Mode Switch from the Junction P.C.B Assembly.
- 4) Remove the Reel Sensors, Sensor LEDs and each holder from the Junction P.C.B(Fig. B-20-2).

* NOTE

- 1) When reassembling the Mode Switch, the groove(V) and (U) of Mode Switch should be at their original place in the Eject Mode.

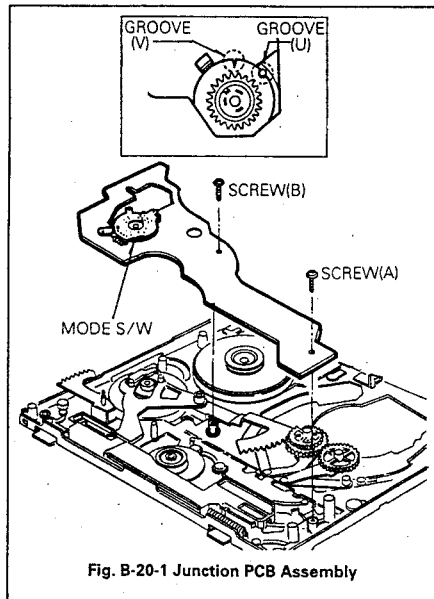


Fig. B-20-1 Junction PCB Assembly

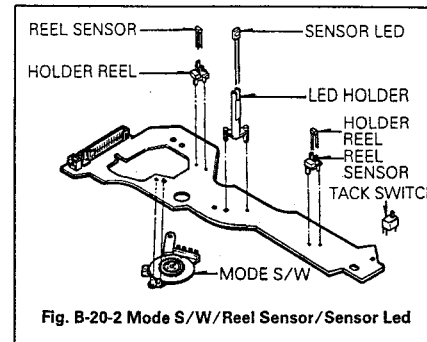


Fig. B-20-2 Mode S/W/Reel Sensor/Sensor Led

21. Capstan Motor and Brake Assembly (Fig. B-21-1)

- 1) Remove the Junction P.C.B Assembly
- 2) Hook the end of Capstan Brake Spring to the projection of Capstan Brake and then remove the Capstan Brake Assembly by lifting it up(Fig. B-21-2).
- 3) Remove two Screws(A), and then remove the Bracket C-Guide.
- 4) Remove the Connector.
- 5) Remove three screws(B), and then remove the Capstan Motor Assembly from the Deck Mechanism Assembly.

* NOTE

- 1) When disassembling and reassembling, hook end of the spring on the projection of Cap-Brake and remove it by lifting it up. Reassemble it in the opposite manner.

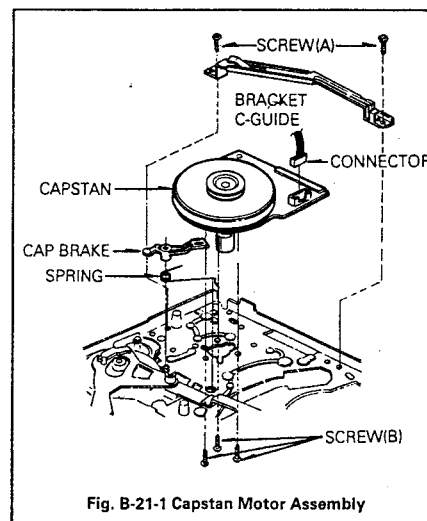
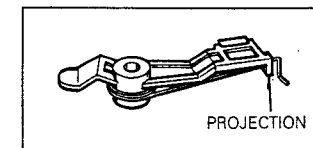


Fig. B-21-1 Capstan Motor Assembly

A: BEFORE REASSEMBLING OR AFTER DISASSEMBLING



B: AFTER REASSEMBLING OR BEFORE DISASSEMBLING

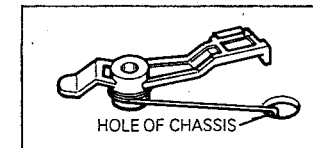


Fig. B-21-2 CAP Brake Assembly

22. Function Plate(Fig. B-22)

- 1) Remove two screws(B) in Eject Mode.
- 2) Remove the Function Plate Spring.
- 3) Remove the Function Plate.

* NOTE

- 1) When reassembling, the groove of Lower part of Function Plate should be aligned with the shaft of Tension Lever Assembly(Fig. B-28).

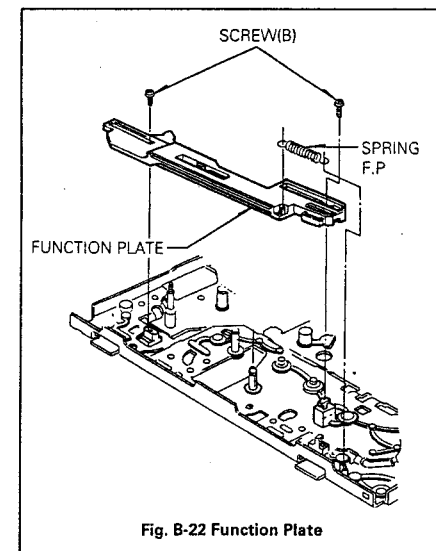


Fig. B-22 Function Plate

23. Ratchet Lever Assembly(Fig. B-23)

- 1) Remove the Function Plate.
- 2) Remove the Junction P.C.B Assembly.
- 3) Remove the Washer(A) and then remove the Ratchet Lever Assembly.
- 4) Remove the Ratchet Spring.
- 5) Remove the Ratchet Lever from the Ratchet 17 by lifting it up when the hook of it is aligned with the hole of Ratchet 17 while rotating it counterclockwise direction.
- 6) Remove the Washer(B), and turn over the Ratchet 17 and then remove the Slant Pin, Spring F, Lever.

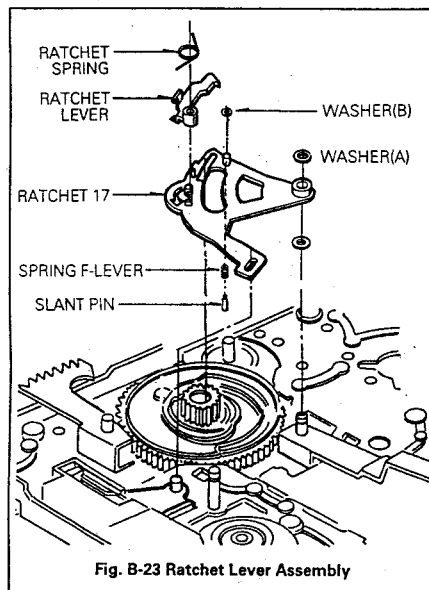


Fig. B-23 Ratchet Lever Assembly

24. Cam Gear/Rack Gear T/Rack Gear FL(Fig. B-24-2)

- 1) Remove the washer(A) and remove the Ratchet Lever Assembly. (Fig. B-24-1).
- 2) Remove the washer(B), and then remove the Cam Gear (Fig. B-24-2).
- 3) Remove the Rack Gear F.L.(Fig. B-24-3)
- 4) Remove the Rack Gear T.(Fig. B-24-3)

* NOTE

- 1) When reassembling
 - ① Align the Projection of Rack Gear T with the hole of Loading Gear.
 - ② Drive the Rack Gear F.L in the direction of arrow(D).
 - ③ Hole of Cam should be aligned with the hole of chassis, and the groove(■) of Cam Gear should be aligned with the hole of PC Gear(Fig. B-25)

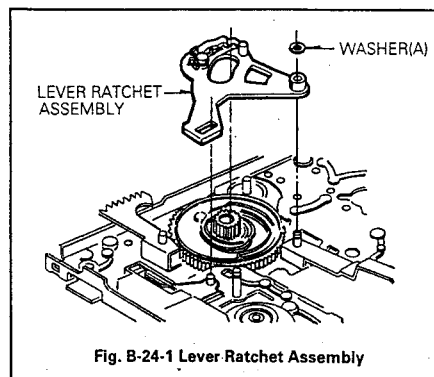


Fig. B-24-1 Lever Ratchet Assembly

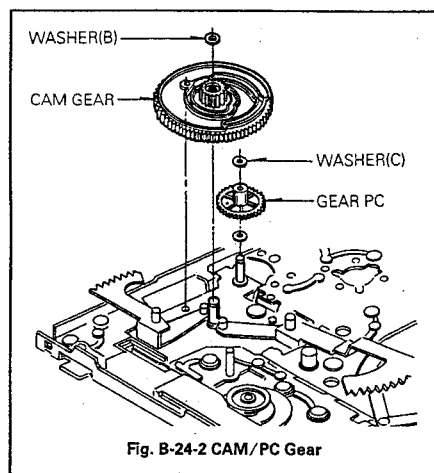


Fig. B-24-2 CAM/PC Gear

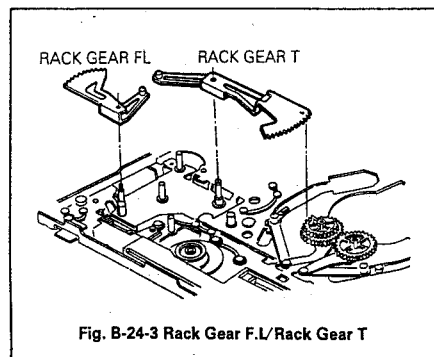


Fig. B-24-3 Rack Gear F.L/Rack Gear T

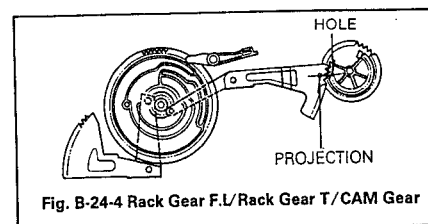


Fig. B-24-4 Rack Gear F.L/Rack Gear T/CAM Gear

25. PC Gear(Fig. B-25)

- 1) Remove the washer(C).
- 2) Remove the P.C Gear by lifting it up.

* NOTE

- 1) When reassembling
 - ① The Groove of PC Gear should be aligned with the groove(V) of Cam Gear, and another hole of it should be aligned with the hole of chassis (Fig. B-25).

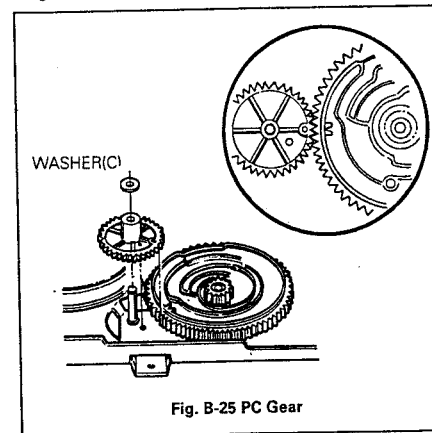


Fig. B-25 PC Gear

26. P2 and P3 Slant Assembly(Fig. B-26)

- 1) After finishing the disassembly of Drum Assembly, remove the P2 and P3 Slant Assembly by turning the Loading Gear(R) in the clockwise direction.(Loading direction)
- 2) Loosen the set screws.
- 3) Remove the Roller Guide from the Slant Base.

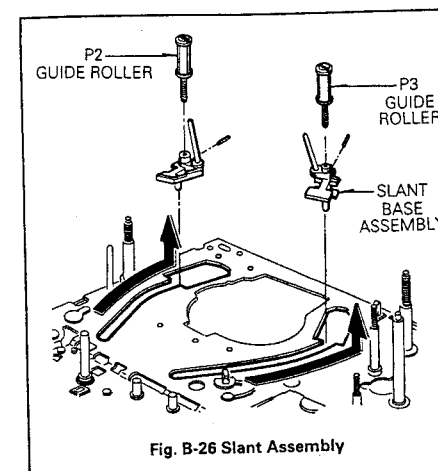


Fig. B-26 Slant Assembly

* NOTE

- 1) When disassembling and reassembling
 - ① Use a Hexagonal wrench to remove set screw.
 - ② Take notice that the P2 and P3 Slant Assembly should not be changed from their original place.

27. Loading Gear Assembly(L),(R) (Fig. B-27)

- 1) Remove the Cam Gear, Rack-T.
- 2) Remove the P2 and P3 Slant Assembly by turning the Loading Gear(L),(R) in the Loading direction
- 3) Lift up the Loading Gear Assembly(L),(R) from the Deck Mechanism Assembly.
- 4) Remove the Spring Load(L),(R).
- 5) Separate the Loading Gear(L), (R) from Lever Load(L),(R).

* NOTE

- 1) When reassembling
 - ① Make sure that the Loading Gear(L) and (R) should not be changed from their original place.
 - ② Align the groove of Loading Gear(L),(O) with the groove of Gear(R),(O).

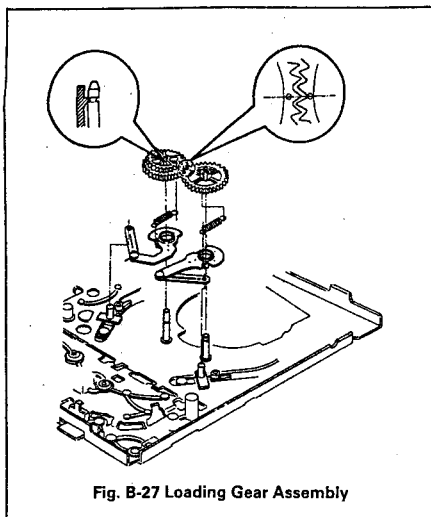


Fig. B-27 Loading Gear Assembly

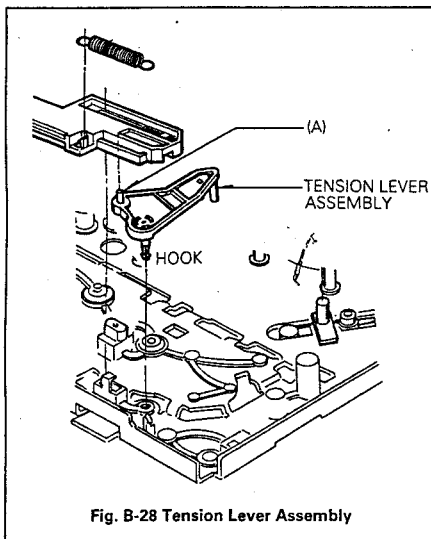


Fig. B-28 Tension Lever Assembly

28. Tension Lever Assembly(Fig. B-28)

- 1) Remove the Function Plate.
- 2) Remove the Tension Lever Assembly by pushing hooks inward.

* NOTE

- 1) When reassembling
 - ① Set the part(A) of Tension Lever Assembly in the groove of Lower part of Function Plate.
 - ② After reinstalling the Tension Lever Assembly, adjust the Tension Post and the Tension with a Tension Cassette.

29. Clutch Gear Assembly(Fig. B-29)

- 1) Remove the Pulley Gear.
- 2) Remove the Plate Function.
- 3) Remove the washer(A), and then remove the Clutch Gear Assembly.

* NOTE

- 1) When reassembling
 - ① Do not disassemble the Clutch Gear Assembly any further, because Torque adjustment is not adjustable.

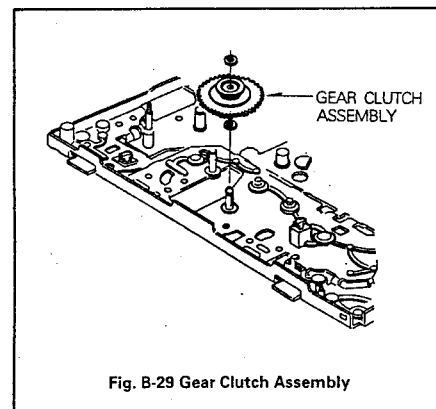


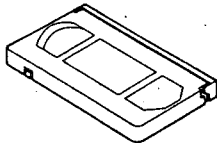
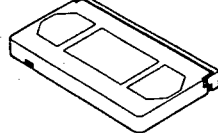
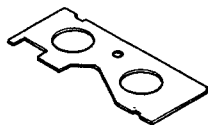


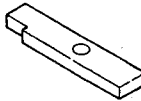

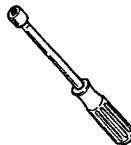
Fig. B-29 Gear Clutch Assembly

30. Take Up Reel Assembly(Fig. B-16)

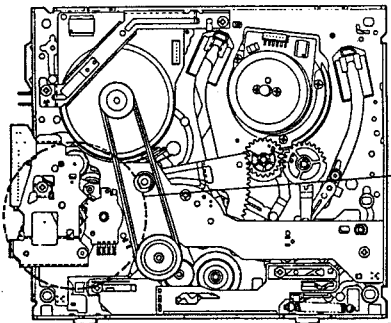
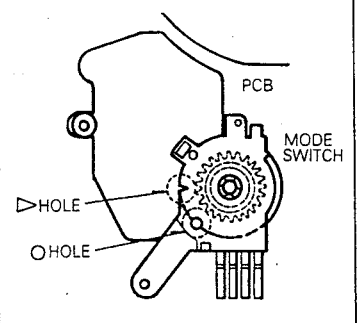
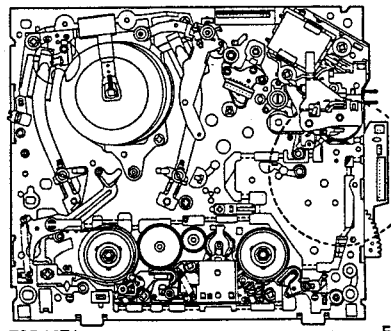
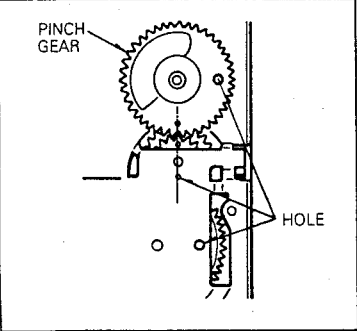
- 1) Remove the TMB(Fig. B-14)
- 2) Lift up the Take-up Reel Assembly from the Deck Mechanism Assembly.
- 3) Separate the Reel Cap and Spring from the Take-Up Reel by releasing Hooks(S).

MECHANISM ADJUSTMENTS

• Tools and Fixtures for Deck

1. Back tension meter Parts No ; D00-D006 	2. NTSC alignment tape Parts No NTSC ; DTN-0001 PAL ; DTN-0002 	3. Master plane Parts No ; RJ10028 
4. Torque gauge Parts No ; D00-D002 	5. Torque gauge adaptor Parts No ; D09-R001 	6. Reel table height fixture Parts No ; RJ10027 
7. Post height adjusting driver Parts No ; DTL-0005 	8. M3 Nut driver Parts No ; DTL-0006 	

1. Mechanism State Switch(Mode Switch) Check

Purpose: To detect accurately the mechanism state and prevent the mechanism from malfunction.		
Test Equipment/Fixture	VCR State	Check Point
● Blank tape	● Eject Mode (with cassette ejected)	● Mechanism state switch (Mode Switch and Cam)
<p>Check Procedure</p> <ol style="list-style-type: none"> 1) Turn the VCR on and eject the tape by pressing eject button. 2) Remove the Cabinet Top and Main P.C.Board, and then turn the Cam so as to align the hole of chassis with the hole of Cam and Pinch Gear, and Holes of Pinch Gear and P.C. Gear with each other. 3) Remove the Bottom Cover and then check that the grooves(V) and (O) of Mode S/W are at their original place. 4) If the above alignment is not obtained, adjust as follows. <ol style="list-style-type: none"> (1) Remove the Bracket Assembly Bottom and the Capstan Belt in the state of power off. (2) Remove the P.C.B Assembly, place the grooves (V) and (O) of mode switch at their original place, and then reassemble the P.C.B Assembly. (3) Turn the power on and perform the various operations to check that the loading and the unloading are correct. 		
<p>Check Diagram</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Fig. C-1-1</p> </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>Fig. C-1-2</p> </div> <div style="text-align: center;">  </div> </div>		

2. Preparation for Adjustment(To set VCR to the loading state without inserting a cassette)

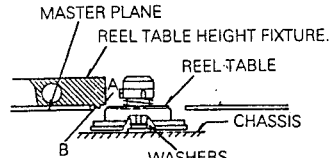
- 1) Unplug the power cord from the AC outlet.
 - 2) Remove the Cabinet Top and Front Loading mechanism.
 - 3) Plug the power cord into the AC outlet.
 - 4) Turn the VCR on and push the tact switch in the PCB Assembly.
- The VCR can accept input of each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

(NOTE)

Always return the VCR to the Front Loading Mechanism Assembling State in the following order after the above operations have been performed.

- 1) Press the Eject button after turning the power on.
- 2) Wait for about 10 seconds until searching out the assembly position.
- 3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
- 4) Refer to the "Front Loading Mechanism Disassembly" which is described previously.

3. Reel Table Height Adjustment

Purpose: To set the reels of the cassette to the specified height, thus determine the height of tape.			
Test Equipment/Fixture	Preparation for adjustment	VCR State	Adjustment Points
● Master Plane ● Reel Table Height Fixture	1) Remove the Front Loading Mechanism 2) Mount the Master Plane and place the Reel Table Height Fixture on it.		● Washer under the Supply and Take-Up Reel Tables.
<p>Adjustment procedure</p> <ol style="list-style-type: none"> 1) Check that the Reel Table is between sections A and B of the Reel Table Height Fixture. 2) If the table is not between sections A and B of the Fixture, replace the washers(two types, 0.3mm and 0.5mm thick) in the Reel Table or adjust them. <p>**CAUTION**</p> <p>When the Tension Arm and Tension Band are removed, adjust the tension post position and tension after reinstalling them.</p>		<p>Adjustment Diagram</p>  <p>SUPPLY AND TAKE-UP REEL TABLE</p> <p>Fig. C-3</p>	

4. Tension Post Position and Tension Adjustment

Purpose: To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test Equipment/Fixture	VCR State	Adjustment Point
● Tension Meter (Tension adjustment)	● Play without cassette and with a Tension Meter	● Holder Band(A)

Adjustment Procedures

⟨Position Adjustment⟩

- 1) Perform loading without inserting a tape and loosen the screw that attaches the Band Holder(B) to the D-Deck Mechanism Assembly.
- 2) Insert the (—)type driver between the Band Holder(B) and the "V" groove of the chassis.
- 3) Move the Band Holder(B) right and left and align the center of tension post with the center of P1.
- 4) Tighten the screw that attaches the Band Holder(B) to Deck Mechanism Assembly.

(2) below the standard: loosen the screw, move the Band Holder(B) left a little and then tighten the screw and make sure that this adjustment is correct.

****CAUTION****
The range of movement of Band Holder(B) should be within $\pm 1.5\text{mm}$ while being adjusted. If the range is over, you should recheck the Reel Brake, Tension Arm and Spring.

⟨Tension Adjustment⟩

- 1) Play the Tension Meter and read the Tension Meter: $35\text{g}\cdot\text{cm} \pm 2.5\text{g}\cdot\text{cm}$ (reference value).
- 2) If the result is abnormal.
 - (1) over the standard: loosen the screw, move the Band Holder(B) right a little and then tighten the screw and make sure that this adjustment is correct.

Adjustment Diagram

ALIGN THE CENTER OF P1 AND TENSION POST

Fig. C-4-1

SCREW
"V" GROOVE
HOLDER BAND(B)

Fig. C-4-2

5. Checking Torque

Purpose: It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape run smoothly and satisfy the basic performance of the VCR. Check these if the tape does not run smoothly or the tape speed is abnormal.

Test Equipment/Fixture		VCR state	
● Torque Gauge ● Torque Gauge Adaptor		● Set the VCR to each operation mode without inserting a cassette. (See '2 Preparation for Adjustment')	

Item	VCR Operation mode	Measurement Reel	Measurement Values
Main brake torque,	Eject	Supply and take-up reels	600g·cm or more
Slack removal torque	Unloading(power off)	Supply reel	110~200g·cm
Fast forward torque	Fast forward	Take-up reel	400g·cm or more
Rewind torque	Rewind	Supply reel	400g·cm or more
Play take-up torque	Play	Take-Up reel	90~130g·cm

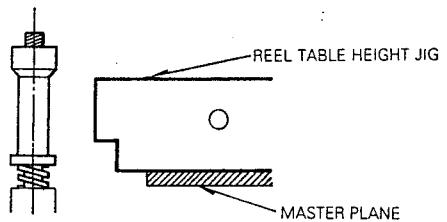
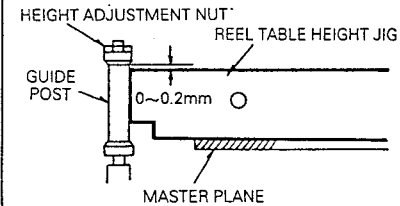
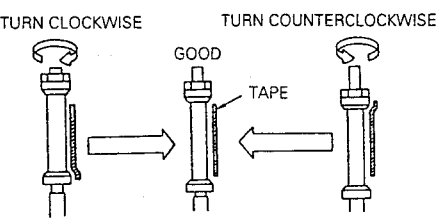
Checking Method
The values are measured by using a torque gauge and torque gauge adaptor with the torque gauge fixed.

Note: This value is measured when the VCR is shifted in the unloading direction from the fast forward or rewind mode and quick braking is applied to both Reel Tables.

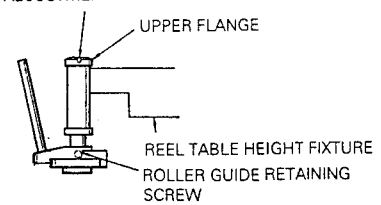
TORQUE GAUGE
TORQUE GAUGE ADAPTOR
REEL TABLE

Fig. C-5

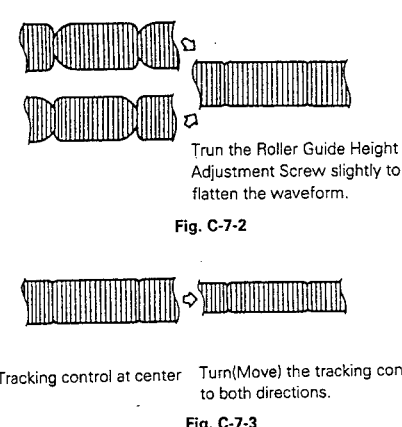
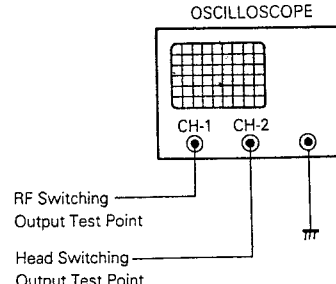
6. Guide Post Height Adjustment

Purpose: To control tape height		
Test Equipment/Fixture	VCR State	Adjustment Point
● Master Plane ● Blank Tape ● Reel Table Height Jig ● Post Height Adjusting Driver ● M3 Nut Driver	● Mount the Master Plane and place the Reel Table Height Jig on it.	● Nuts on Impedance Roller ● Guide Post
<div>1) Set the clearance between the bottom of the P1 Roller Flange and under cut of Reel Table Height Fixture to 0~0.1mm(Fig. C-6-1).</div> <div>2) Set the clearance between the bottom of the Guide Post upper flange and top of the Reel Table Height Jig to 0~0.2mm(Fig. C-6-2).</div> <div>3) Load and run the Tape and check that the tape does not ride over the upper and lower flanges of the guide post.</div> <div>4) If the tape rides over either flange, adjust the height of P1 Roller and Guide Post as follows(Fig. C-6-3).<ul style="list-style-type: none">• If the tape rides over the upper flange, turn the nut counterclockwise.• If the tape rides over the lower flange, turn the nut clockwise.</div>		
<div>Adjustment Diagrams</div> <div><p>Fig. C-6-1</p></div> <div><p>Fig. C-6-2</p></div> <div><p>Fig. C-6-3</p></div>		

7. Guide Roller Height Adjustment

Purpose: To regulate the height of tape so that the bottom of tape runs along the tape guide line on the lower drum.		
Test Equipment/Fixture	VCR State	Adjustment Point
● Master Plane ● Reel Table Height Fixture ● Hexagonal Wrench ● Post Height Adjusting Driver	● Mount the Master Plane and place the Reel Table Height Fixture on it.	● Roller Guide Height Adjustment Screws on the Supply and Take-Up Guide Rollers.
Adjustment Procedure <div>1) Align the bottom of the Guide Roller's upper flange and the top of the Reel Table Height Fixture.</div> <div>2) Perform the precise adjustment next.</div> <div>3) When the Guide Roller is damaged, release the Guide Roller retaining screw and then replace the Guide Roller.</div>		Adjustment Diagram <div><p>Fig. C-7-1</p></div>

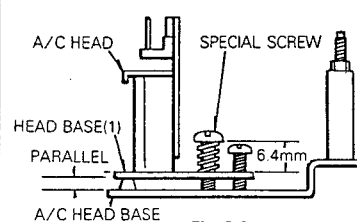
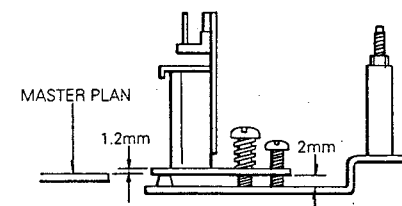
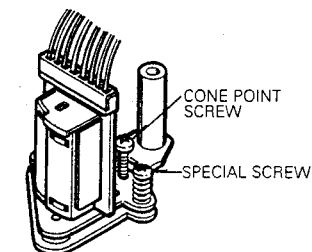
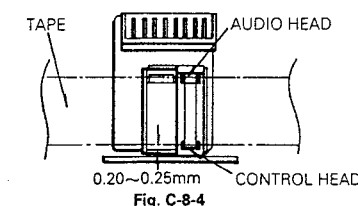
B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> ● Oscilloscope ● Post Height Adjusting Driver ● Alignment Tape ● Hexagonal wrench 	<ul style="list-style-type: none"> ● CH-1:PB RF Envelope ● CH-2:SW 3-Hz ● Head Switching Output Point ● RF Envelope Output Point 	<ul style="list-style-type: none"> ● Play an alignment tape 	<ul style="list-style-type: none"> ● Guide Roller Height Adjustment Screws.
Adjustment Procedure <ol style="list-style-type: none"> 1) Play an alignment tape after connecting the probe of the oscilloscope to RF Envelope Output Test Point and Head Switching Output Test Point. 2) Tracking control(in PB mode):Center position(When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.) 3) Height adjustment screw:Flatten the RF waveform. 4) Turn(Move) the tracking control(playback) clockwise and counterclockwise.(to the right and left) 5) Check that the drops of RF output are uniform at the start and end. 			
Waveform Diagrams  <p>Turn the Roller Guide Height Adjustment Screw slightly to flatten the waveform.</p> <p>Tracking control at center Turn(Move) the tracking control to both directions.</p>		Connection Diagram 	

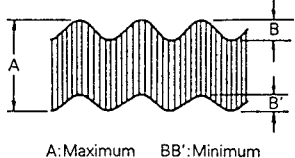
8. Audio/Control(A/C) Head Adjustment

Purpose: To keep the contact between the tape and head so that the specified track is recorded and played back.

A. Coarse Adjustment

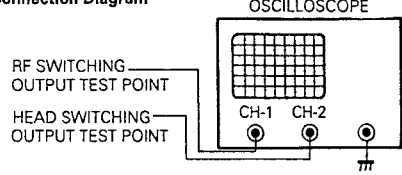
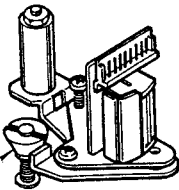
Test Equipment/Fixture	VCR State	Adjustment Points
<ul style="list-style-type: none"> ● Master Plane ● Reel Table Height Fixture ● M3 Nut Driver 	<ul style="list-style-type: none"> ● Mount the Mater Plane and place the Reel Table Height Fixture on it. 	<ul style="list-style-type: none"> ● Special screw ● Cone Point Screw for tilt ● Azimuth Adjustment Screw ● A/C Head Adjuster
<ul style="list-style-type: none"> ● Blank tape 	<ul style="list-style-type: none"> ● Run the blank tape 	
Adjustment procedure/Adjustment Diagram <ol style="list-style-type: none"> 1) Tighten the spring section of the special screw so that it protrudes 6.4mm(approx.) over the top of Head Base(1).  <p>Fig. C-8-1</p>  <p>Fig. C-8-3</p> <ol style="list-style-type: none"> 2) Turn the Azimuth Adjustment Screw and Cone Point Screw so that the Head Base(1) and A/C Head Base are parallel.  <p>Fig. C-8-2</p> 3) Turn the A/C Head Adjuster until the clearance between the Master Plane and Head Base(1) is approx 1.2mm.  <p>Fig. C-8-4</p> 4) Remove the adjustment fixture, load a blank tape and set the VCR to the play mode. 5) Check that there is no conspicuous curling and riding over around the A/C head. If there is conspicuous curling or riding over, readjust the Cone Point Screw, Azimuth Adjustment Screw and A/C Head Adjuster. When the bottom edge of tape is 0.20~0.25mm from the bottom edge of the control head's core, the height of A/C head is ideal. 6) Perform the precise adjustment continuously. 		

B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Point	VCR State	Adjustment Points
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tapes ● M3 Nut Driver 	<ul style="list-style-type: none"> ● Audio output jack 	<ul style="list-style-type: none"> ● Play an alignment tape 1KHz, 7KHz sections 	<ul style="list-style-type: none"> ● Azimuth Adjustment Screw ● A/C Head adjuster ● Cone point screw
Adjustment Procedure 1) Connect the probe of oscilloscope to audio output jack. 2) Adjust the Azimuth Adjustment Screw, A/C Head adjuster and cone point screw slightly and alternately so that a Audio 1KHz output is maximum and flat.(minimum fluctuation) 3) Adjust the Azimuth Adjustment Screw slightly and alternately so that the Audio 7KHz output is maximum.		Waveform Diagram  <p>A:Maximum BB':Minimum</p> <p>Fig. C-8-5</p>	

9. X-Value Adjustment

Purpose:To obtain compatibility with other VCRs.

Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Points
<ul style="list-style-type: none"> ● Oscilloscope ● Alignment tapes ● Post Height Adjusting Driver 	<ul style="list-style-type: none"> ● CH-1:PB RF Envelope ● CH-2:SW 30Hz ● Head Switching Output Test Point ● RF Envelope Output Test Point 	<ul style="list-style-type: none"> ● Play an alignment tape 	<ul style="list-style-type: none"> ● X Adjust
Connection Diagram 		Adjustment Procedure  <p>X ADJUST</p> <p>Fig. C-9</p>	

10. Adjustment after Replacing Drum Assembly(Video Heads)

Purpose: To suppress drift in the height relative to the Guide Roller and drift of the X Value after replacing the drum.

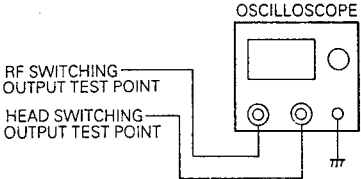
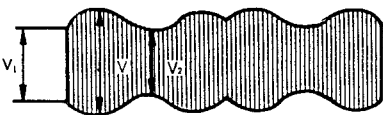
Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Points
<ul style="list-style-type: none"> ● Oscilloscope ● Post Height Adjusting Driver ● Alignment tape ● Blank tape ● M3 Nut Driver 	Checking the flatness <ul style="list-style-type: none"> ● CH-1:PB RF Envelope ● CH-2:SW 30Hz ● Head Switching Output Point ● RF Envelope Output Point 	<ul style="list-style-type: none"> ● Run the blank tape ● Play an alignment tape 	<ul style="list-style-type: none"> ● Guide Rollers Precise Adjustment ● Switching point ● Tracking point ● X-Value
Connection Diagram 		Waveform Diagram  <p> $V_1/V \text{ MAX} > 0.7$ $V_2/V \text{ MAX} > 0.8$ RF ENVELOPE OUTPUT </p>	
Checking/Adjustment Procedure <ol style="list-style-type: none"> 1) Run the blank tape, check and adjust whether the Roller Guide is curling or creasing tape around the Roller Guide. 2) Check the RF envelope output flatness and adjust the Roller Guide Height while playing an alignment tape. 3) Adjust the head switching point. 4) Check that RF envelope output is maximum when the tracking is at the center click position. 5) Adjust the Tracking Preset and X-Value Adjust with X Adjust. 			

Fig. C-10

11. Maintenance/Inspection Procedure

(1) Required Maintenance

The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise, at tolerances of 1/1000mm, to ensure compatibility with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, are necessary.

(2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used.

But, in general home use, a good picture will be maintained if the inspection and maintenance is made every 1,000hours. The table below shows the relation between time used and inspection period.

Table 1

When inspection is necessary	About 1 year	About 18 months	About 3 years
Average hours used per day			
One hour			
Two hours			
Three hours			

(3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.

Check with the customer to find out how often the unit is used, and then determine that the unit is ready for inspection and maintenance. Check the following parts.

Table 2

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on belt

(4) Supplies Required for Inspection and Maintenance

- (1) Greases Kanto G-31(or equivalent)
- (2) Alcohol(or freon)
- (3) Cleaning Patches

5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with alcohol or freon to the point indicated. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.

(Do not move the cleaning patch vertically and make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)

Thoroughly dry the head. Then test tape-running. If alcohol or freon remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Cleaning the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with alcohol or freon.

Note:

- ① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which move the tape.
- ② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no force is applied to the system that would cause deforming.

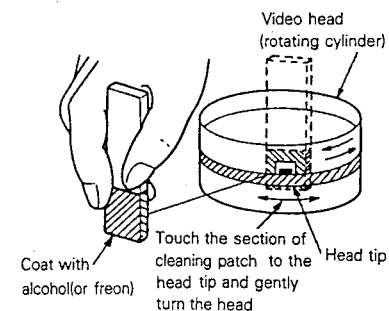


Fig. C-11-1

5-2) Greasing

(1) Greasing guidelines

Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport of drive system. Wipe any excess and clean with cleaning patch wetted in alcohol or freon.

(2) Periodic greasing

Grease specified locations every 5,000hours.

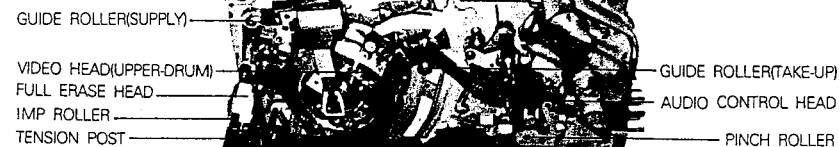
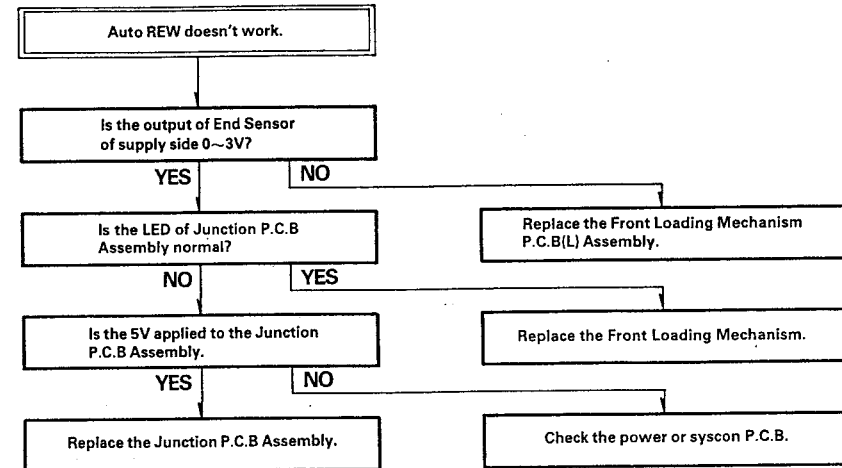


Fig. C-11-2 Tape Transport System

MECHANISM TROUBLESHOOTING GUIDE

1. Deck Mechanism



Phenomenon	Inspection	Replacement
Color beats	Dirt on full-erase head	○
Poor S/N no color	Dirt on video head	○
Vertical jitter	Dirt on video head Dirt in tape transport system	○
Low volume, Sound distorted	Dirt on audio/control head	○
Tape does not run, Tape is slack	Dirt on pinch roller	○

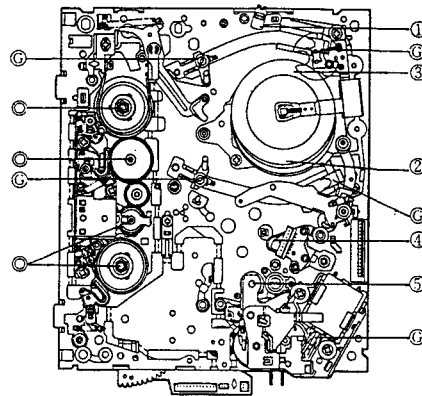


Fig. A-12 Top View of Mechanism

Phenomenon	Inspection Location	Replacement
Do not fast forward or rewind, or rotation is slow	Dirt on reel belt	○
Tape does not run		
Slack tape		

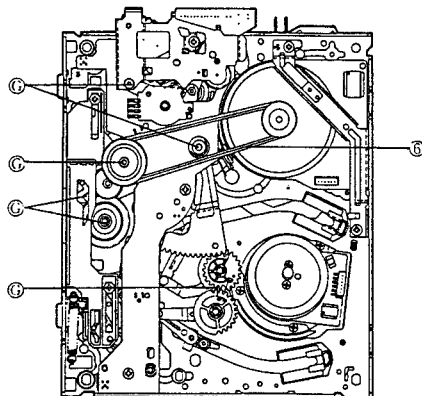
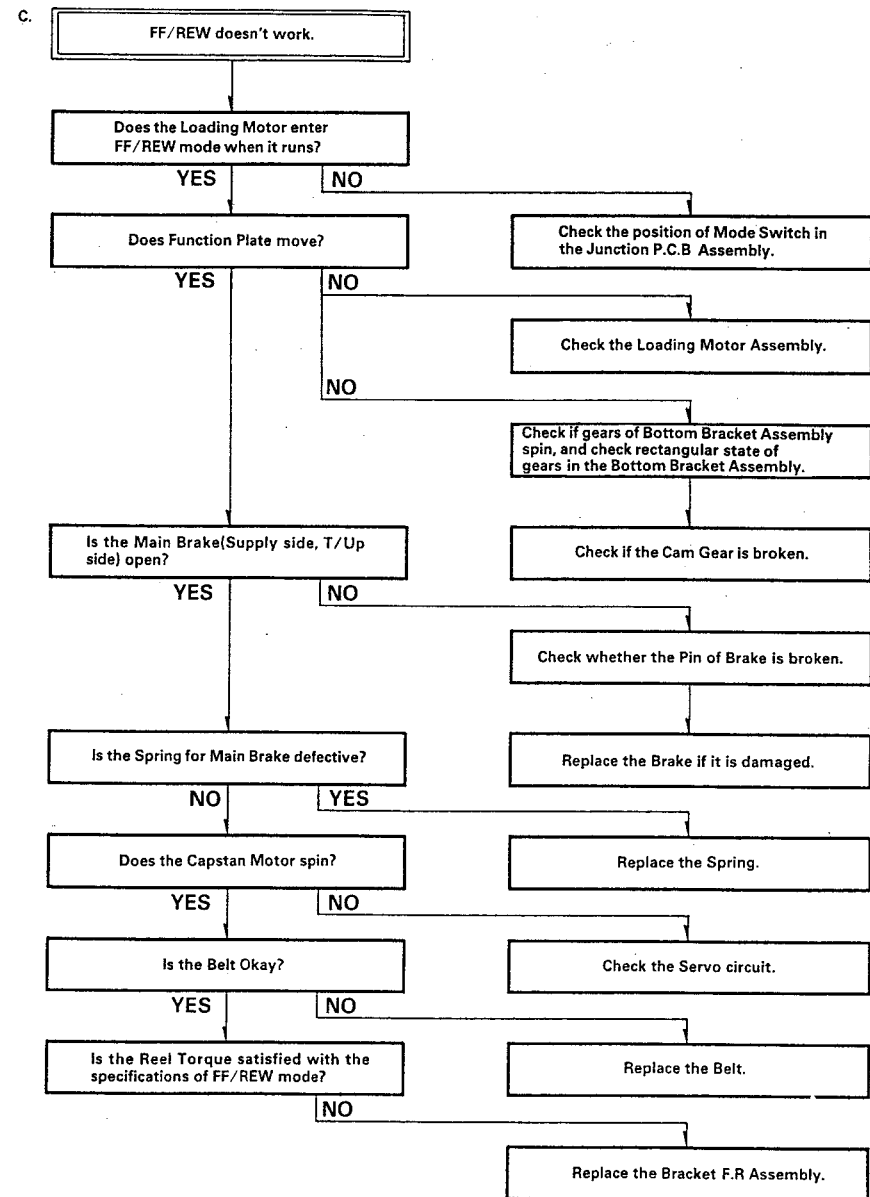
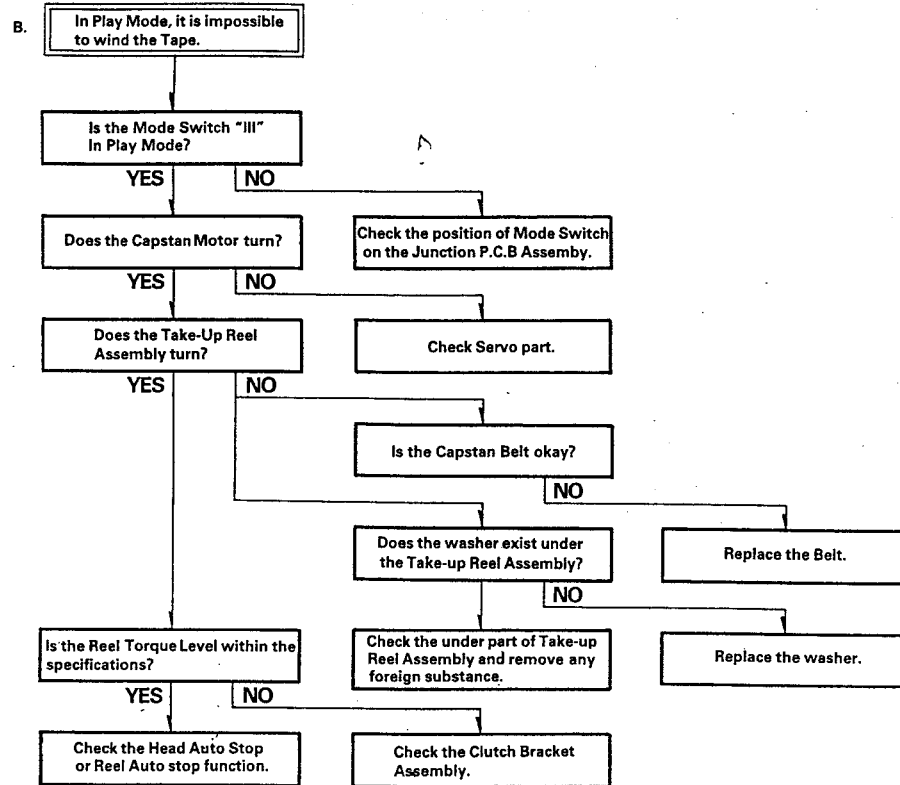


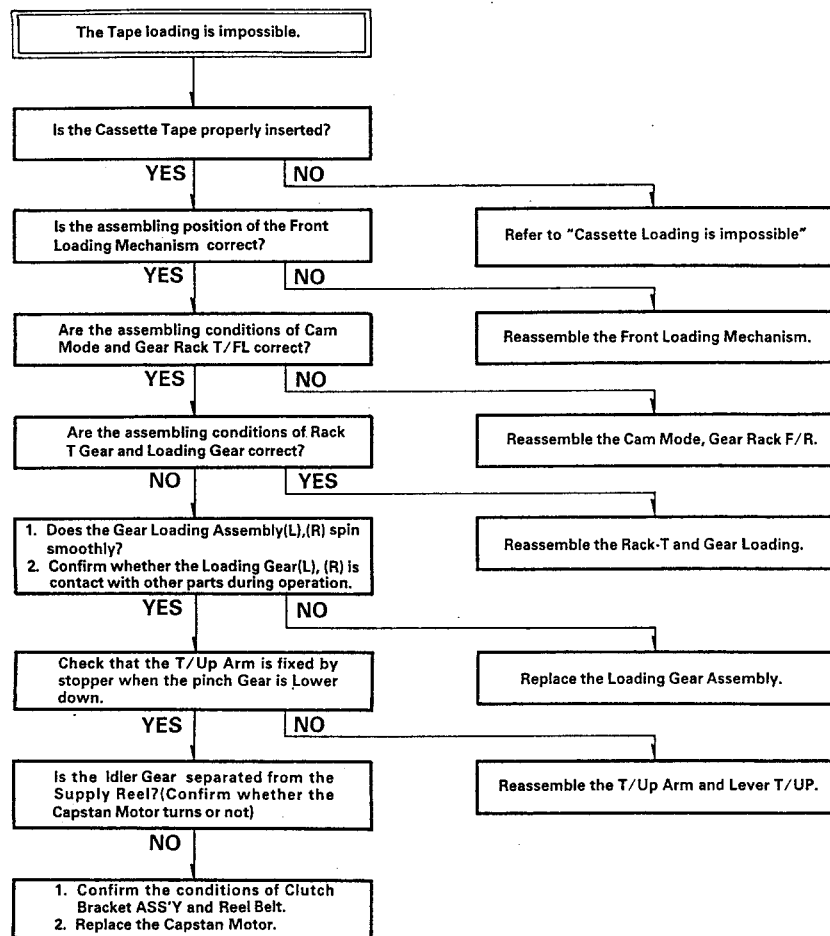
Fig. A-13 Bottom View of Mechanism

◎:Grease

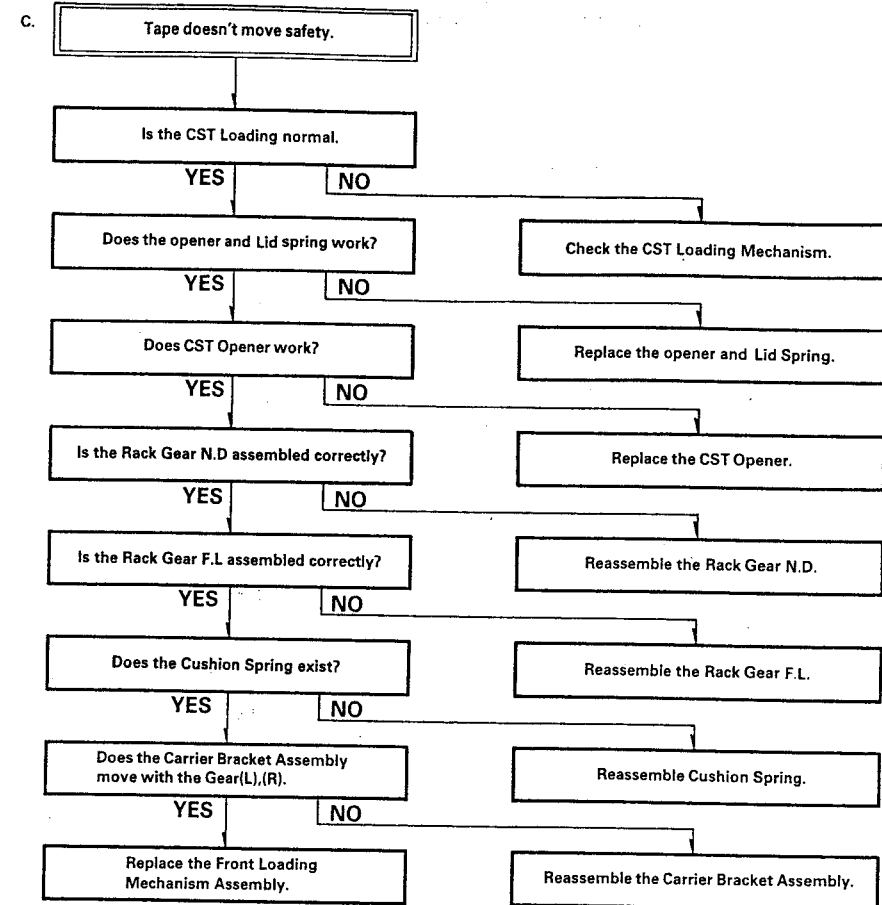
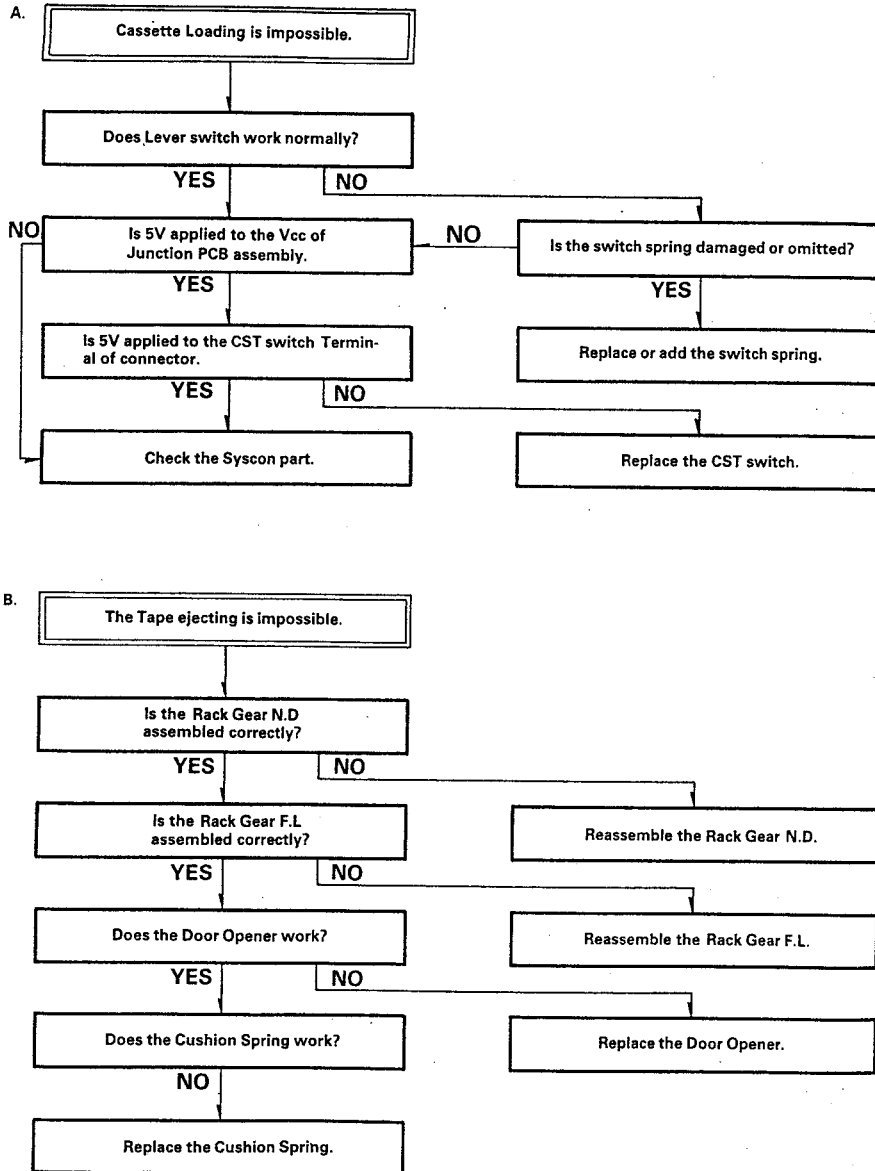
Note: If locations marked with ○ do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.



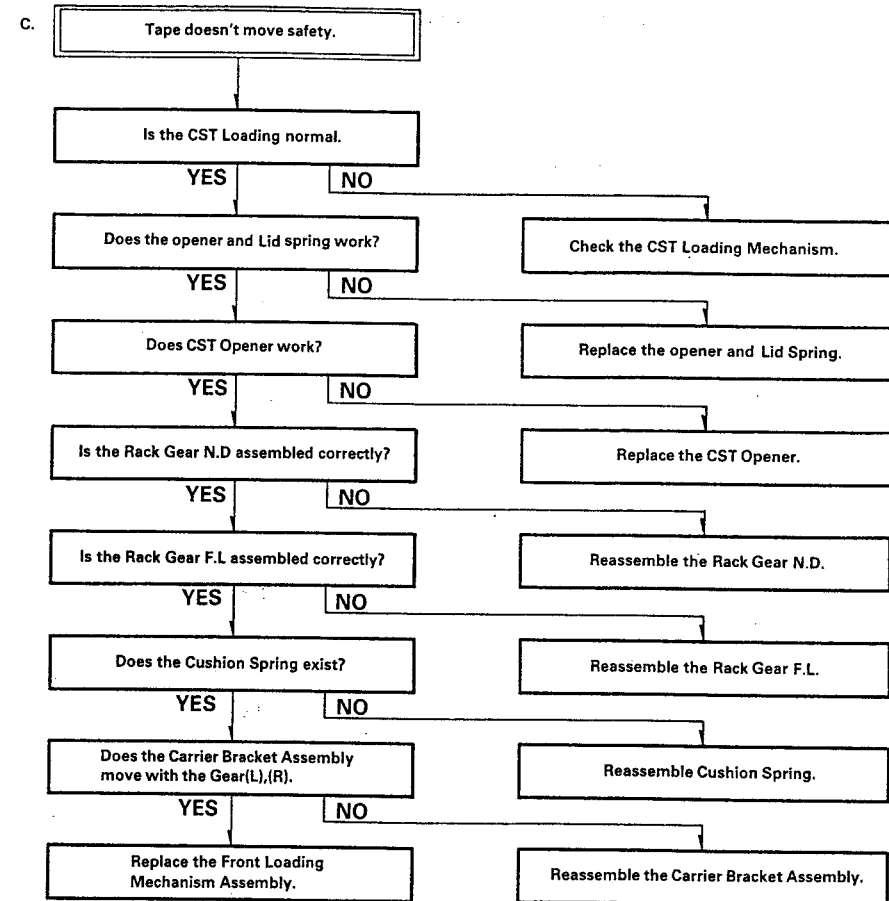
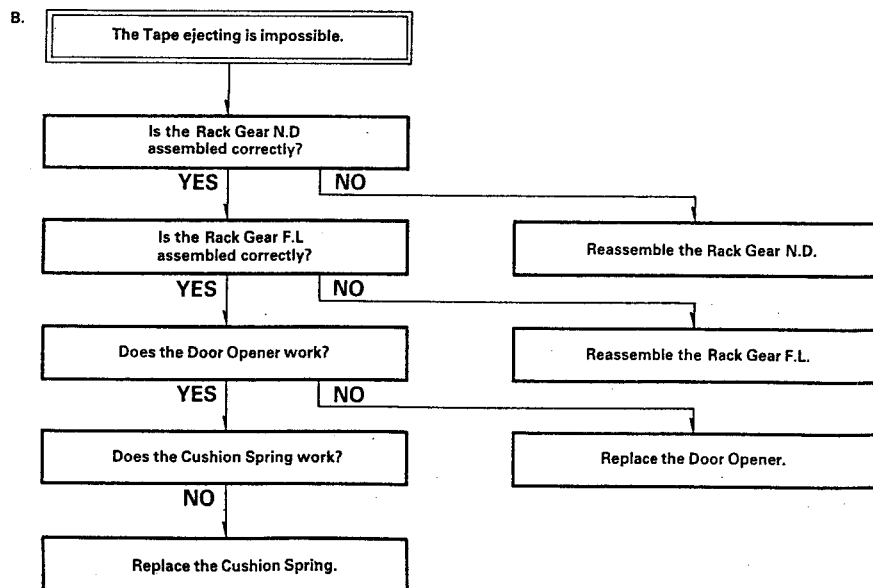
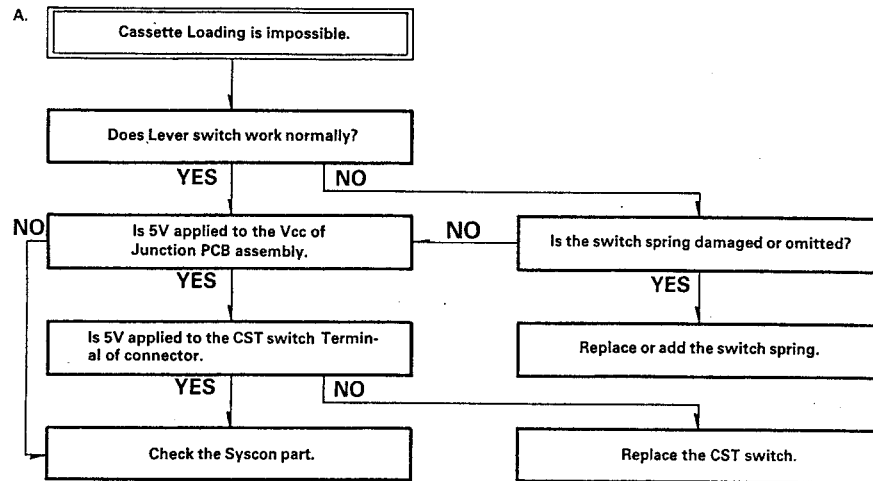
D.



2. Front Loading Mechanism






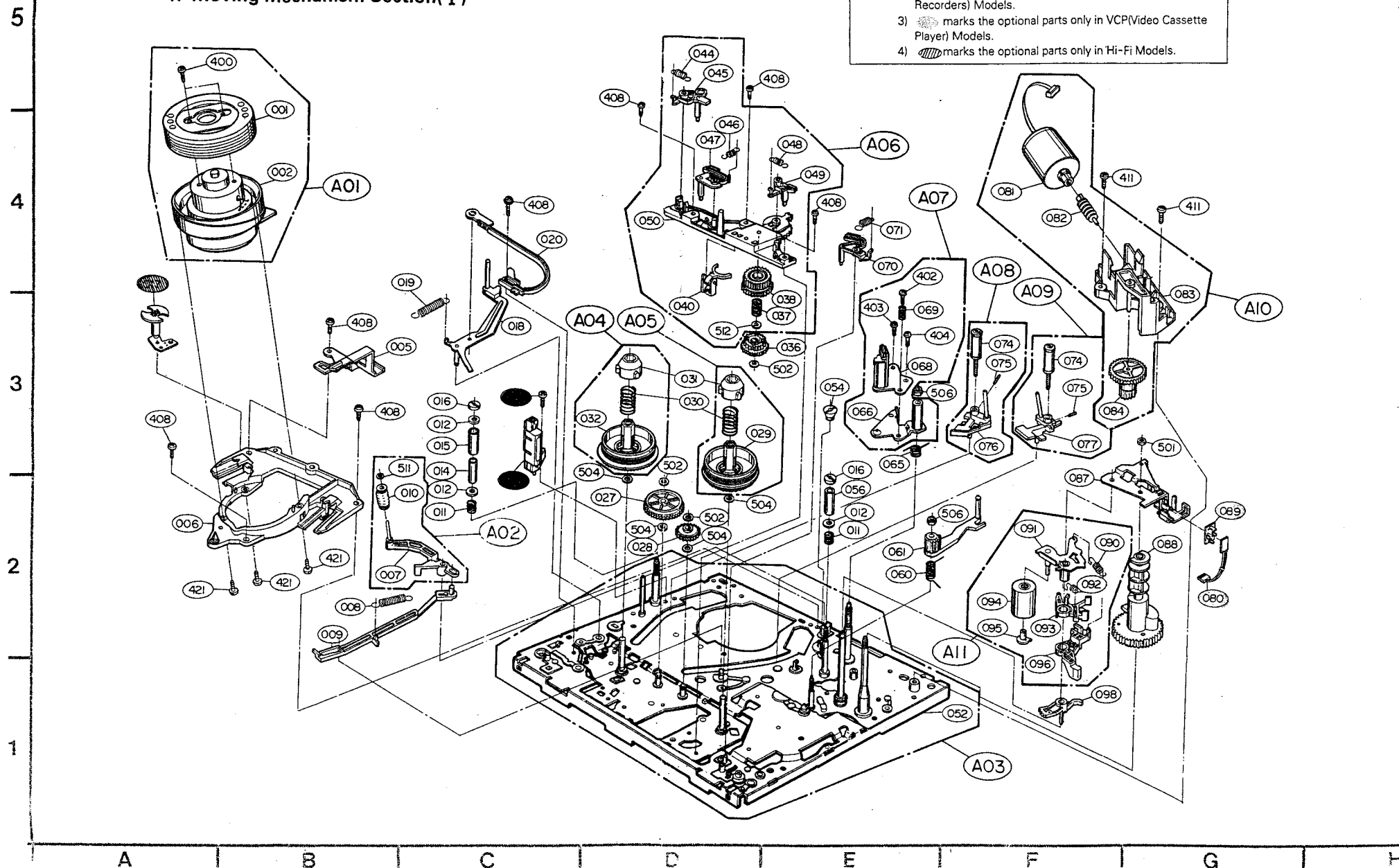
2. Front Loading Mechanism



EXPLODED VIEW

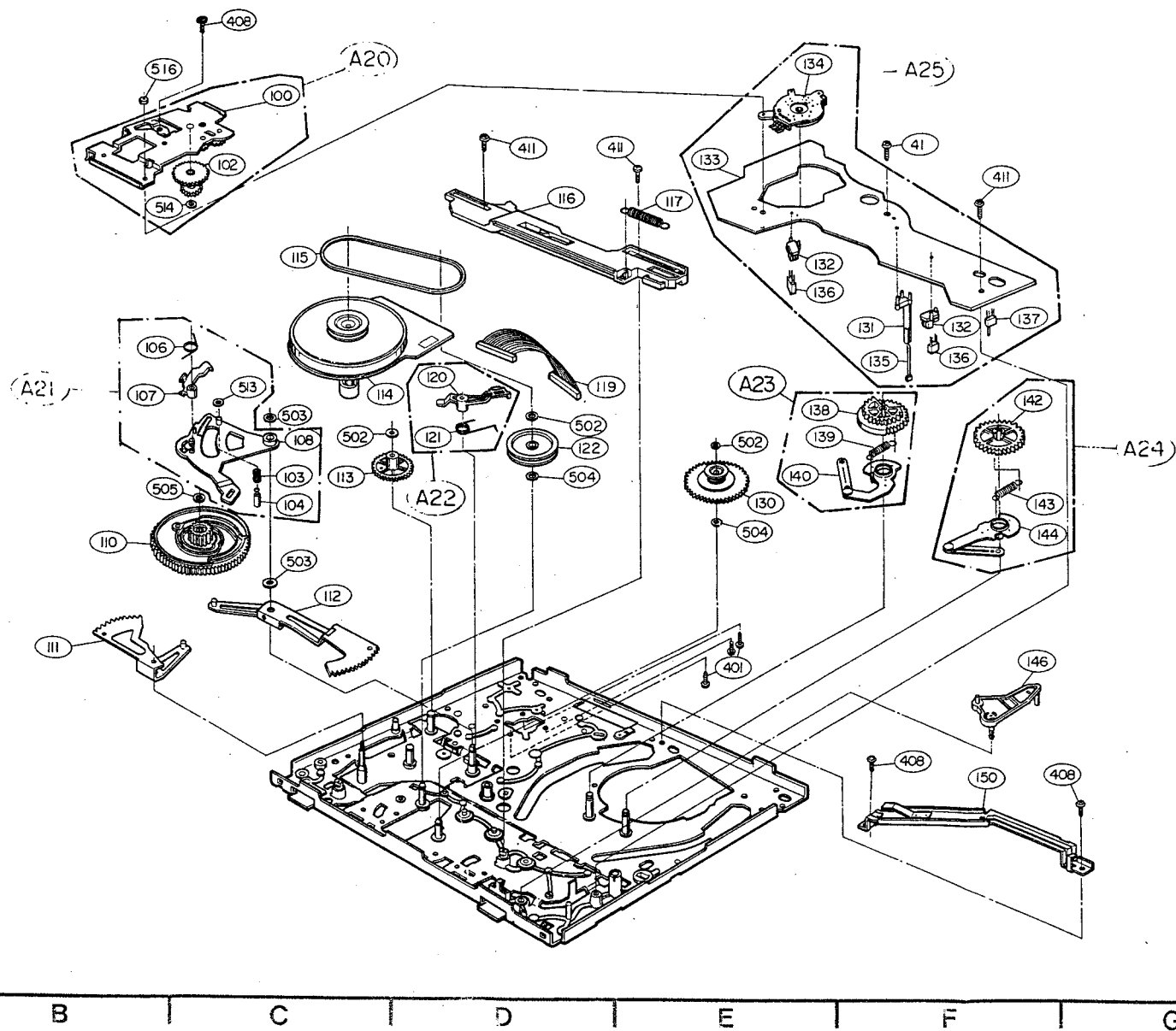
1. Moving Mechanism Section(I)

- NOTE)** 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
 2)  marks the optional parts only in VCR(Video Cassette Recorders) Models.
 3)  marks the optional parts only in VCP(Video Cassette Player) Models.
 4)  marks the optional parts only in Hi-Fi Models.



2. Moving Mechanism Section(Ⅱ)

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST"
in order to look for the part number of each part.



3. Front Loading Mechanism Section

NOTE: 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.

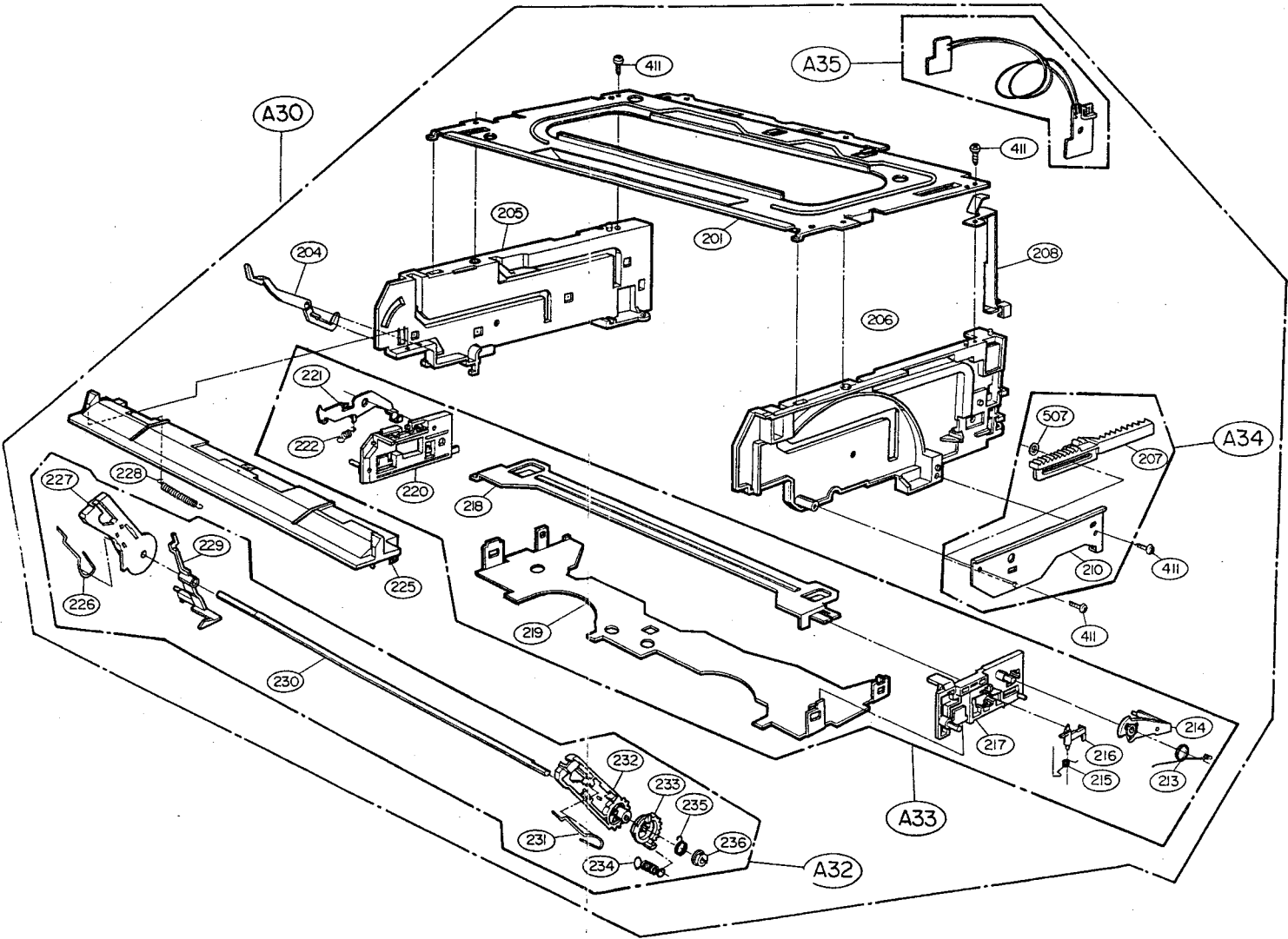
5

4

3

2

1



A

B

C

D

E

F

G

4-45

4-46

SECTION 5 REPLACEMENT PARTS LIST

Mechanical Section

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A00	412-126A	DECK	ASSY D-17 P (4HD VCR PAL)	NSP NSP
OR		A00	412C126A	DECK	ASSY D-17 S (S/J)	
OR		A00	412G126A	DECK	ASSY D-17(4HD)	
OR		A00	412H126A	DECK	ASSY D-17(4HD)	
OR		A00	412W126A	DECK	ASSY D-17 P (D/Y)	
		A01	413-222D	DRUM	ASSY (D17-PAL:D4HD/S)	
OR		A01	413F222D	DRUM	ASSY GSA (D17-P4)	
		A02	386-296B	ARM	ASSY CL	
OR		A03	311-005G	CHASSIS ASSY'	D17	
		A03	311-005M	CHASSIS ASSY'	D17	
		A04	456-048A	REEL	ASSY SUPPLY POM 7G	
		A05	456-045A	REEL	ASSY T/UP POM 7G	
		A06	321-397D	BRACKET	ASSY F/R	
		A07	225-228A	BASE	ASSY A/C	
OR		A08	225-248A	BASE	ASSY,P2	
		A08	225-248B	BASE	ASSY P2 (W-W)	
OR		A09	225-249A	BASE	ASSY,P3	
		A09	225-249B	BASE	ASSY P3 (W-W)	
		A10	414-104A	MOTOR	ASSY LOAD	
		A11	333-209E	LEVER	ASSY PINCH	
		A20	321-401A	BRACKET	ASSY BOTTOM	
		A21	333-208A	LEVER	ASSY RAT	
		A22	338-078A	BRAKE	ASSY CAP	
		A23	386-218A	ARM	ASSY LOAD(R)	
		A24	386-219A	ARM	ASSY LOAD(L)	
		A25	511-997D	PWB ASSY	D-17,VCR	
OR		A30	219-017F	HOUSING	ASSY (D17)	
		A30	219-017L	HOUSING	ASSY (D17)	
		A32	435-257B	GEAR	ASSY DRIVE (HOOK ADDED)	
		A33	321-406A	BRACKET	ASSY CARRIER	
		A34	321-441A	BRACKET	ASSY SIDE	
		A35	515-106B	PWB ASSY	SENSOR	
PARTS SECTION						
		001	413-165D	DRUM	ASSY UPPER(D17-PAL:D4HD/S)	NSP NSP NSP
		002	413-220A	DRUM	ASSY LOWER (D17-4CH)	
OR		005	225-231B	BASE	ASSY D-BRUSH	
		006	225-220A	BASE	DRUM	
OR		006	225-220B	BASE	DRUM (W-W)	
		006	225-220C	BASE	DRUM (Y-H)	
		007	386-297A	ARM	SUB ASSY CU	
		008	442-460B	SPRING	CU	
		009	442-459A	SPRING	CL	
		010	386-295B	ARM	CL	
		012	384-071A	GUIDE	17	
		013	523-082B	HEAD	FE,HVFHF0010AK	
OR		013	523-824A	HEAD	F.E MH-131G (D-17)	
		014	378-017A	SLEEVE	P1	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
OR		015	434-178A	ROLLER	P1	
		015	434-178B	ROLLER	P1	
		016	389-003B	ADJUST	P(4)	
		018	386-205A	ARM	ASSY TENSION	
		019	442-331C	SPRING	TENSION	
		020	328-052B	BAND	ASSY TENSION	
		021	334-066A	STOPPER	P1	
		027	435-243A	GEAR	IDLE A POM 3G	
		028	435-244A	GEAR	IDLE B POM 3G	
		029	456-040A	REEL	T17	NSP
		030	442-341A	SPRING	REEL	NSP
		031	276-068A	CAP	REEL	NSP
		032	456-039A	REEL	S17	NSP
		036	435-240A	GEAR	F/R POM 3G	
		037	442-336A	SPRING	UP/D	NSP
		038	435-239A	GEAR	UP/D POM 3G	
		040	333-201B	LEVER	ASSY F/R	NSP
		044	442-338B	SPRING	SSB	NSP
		045	338-081A	BRAKE	S-SOFT	NSP
		046	442-337A	SPRING	SMB	NSP
		047	338-080A	BRAKE	ASSY S-MAIN	NSP
		048	442-339D	SPRING	TSB	NSP
		049	338-083A	BRAKE	ASSY T-SOFT	NSP
		050	321-396A	BRACKET	SUB ASSY F/R	NSP
		054	389-013A	ADJUST	X-ASSY	
		056	378-018A	SLEEVE	P4	
		060	442-343A	SPRING	T/UP	
		061	386-387B	ARM	ASSY T/UP	
		065	442-332A	SPRING	A/C	
		066	225-219A	BASE	SUB ASSY A/C	NSP
		068	523-089A	HEAD	SUB ASSY A/C	
		069	442-362A	SPRING	AZIMUTH	
		070	338-085A	BRAKE	ASSY T-MAIN	
		071	442-344A	SPRING	TMB	
		074	434-173A	ROLLER	ASSY GUIDE	
		075	353-054B	SCREW	MINIATURE	
		076	225-226B	BASE	SUB ASSY SLALT (L,W-W)	
		077	225-225B	BASE	SUB ASSY SLALT (R,W-W)	
		081	414-105A	MOTOR	SUB ASSY,L	
		082	437-009A	WORM	ASSY	
		083	321-410A	BRACKET	SUB ASSY L/M	
		084	433-023A	WHEEL	WORM	
		087	321-470A	BRACKET	ASSY DEW	
		088	435-448A	GEAR	PINCH (N)	
		090	442-347A	SPRING	PINCH	NSP
		091	386-210A	ARM	ASSY PINCH	NSP
		092	442-346A	SPRING	STOPPER	NSP
		093	334-050C	STOPPER	PINCH	NSP
	OR	094	434-181A	ROLLER	ASSY PINCH	
		094	434-181B	ROLLER	PINCH D14 X L18	
		095	276-089B	CAP	PINCH	NSP
		096	333-203A	LEVER	PINCH	NSP
		098	333-344A	LEVER	T-UP (N)	
		100	321-463A	BRACKET	SUB ASSY B	NSP
		102	435-249A	GEAR	RAT1	NSP

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
OR		103	442-356A	SPRING	F-LEVER	NSP
		104	356-208A	PIN	F-LEVER	NSP
		106	442-345A	SPRING	RAT	NSP
		107	333-202A	LEVER	RAT	NSP
		108	333-207A	LEVER	F17	NSP
		110	374-005A	CAM	D17 POM 10G	
		111	435-318A	GEAR	ASSY RACK F/L	
		112	435-291A	GEAR	ASSY RACK T	
		113	435-246A	GEAR	PC POM 3G	
		114	414-121B	MOTOR	CAPSTAN, GVC017S	
		115	452-047A	BELT	CENTER D71.9 X SQRT2.0	
		116	256-734A	PLATE	F17	
		117	442-342B	SPRING	FP	
		120	338-089A	BRAKE	SUB ASSY CAP	
		121	442-333A	SPRING	CAPSTAN	
		122	432-038A	PULLEY	GEAR POM 3G	
		130	337-005A	CLUTCH	ASSY POM 7G FELT 20X1X1T 2EA	
		131	340-001A	HOLDER	LED (Q)	
		132	324-642A	HOLDER	R/S	
		133	513-494D	PWB	JUNCTION D-17 VCR	NSP
		134	556-133A	SWITCH	MODE	
	OR	134	556-133B	SWITCH	MODE, ALPS	
		135	0DL451000AA	DIODE LED	IR SENSOR GL451(LONG) SHARP	
	OR	135	0DL550000AB	DIODE LED	IR SENSOR EL-55L(LONG) KOC	
		136	657-102K	SENSOR	SG-105(REEL) D-16 KOC	
		137	556-131A	SWITCH	ESE-105SV1	
		138	435-234A	GEAR	LOAD(R)	
		139	442-330A	SPRING	LOADING	
		140	386-274A	ARM	SUB ASSY (R)	
		142	435-235A	GEAR	LOAD(L)	
		143	442-330B	SPRING	LOADING	
		144	386-273A	ARM	SUB ASSY (L)	
		146	333-218A	LEVER	ASSY A-TEN	
		150	321-527A	BRACKET	ASSY C-GUIDE	
		201	256-934B	PLATE	TOP	
		204	465-026A	OPENER	DOOR	
		205	321-517B	BRACKET	LEFT (D17)	
		206	321-518A	BRACKET	RIGHT (D17)	
		207	435-278A	GEAR	RACK N/D	
		208	256-910A	PLATE	GND TOP	
		210	321-440A	BRACKET	SIDE	
		213	442-351A	SPRING	OC	NSP
		214	465-028A	OPENER	CST	NSP
		215	442-357A	SPRING	RID	NSP
		216	465-027A	OPENER	RID	NSP
		217	324-647A	HOLDER	R	NSP
		218	321-407A	BRACKET	SUPPORT	NSP
		219	321-405A	BRACKET	CARRIER	NSP
		220	324-646A	HOLDER	L	NSP
		221	333-210A	LEVER	DT	NSP
		222	442-358B	SPRING	DT	NSP
		225	384-074A	GUIDE	CST	
		226	442-352A	SPRING	L	NSP
		227	435-254A	GEAR	L	NSP
		228	442-350A	SPRING	S/W	

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		229	333-204A	LEVER	S/W	NSP
		230	423-368A	SHAFT	D	NSP
		231	442-353A	SPRING	R	NSP
		232	435-255A	GEAR	R	NSP
		233	435-256B	GEAR	C (HOOK ADDED)	NSP
		234	442-359C	SPRING	CUSHION (D17F/L)	NSP
		235	442-354A	SPRING	CC	NSP
		236	276-086A	CAP	DRIVE	NSP
SCREW						
		400	1MDC0302418	PAN HEAD MACHINE SCREW P/WASH+	D 3.0 L 8.0 MSWR3/FZY	
		401	1MPK0261418	PAN HEAD MACHINE SCREW +,-	D 2.6 L 4.0 MSWR3/FZY	
		402	353-021D	SCREW	SPECIAL	
		404	353-048C	SCREW	CONE POINT 3X10	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZMY)	
		412	1MBC0302818	BINDING HEAD MACHINE SCREW +	D 3.0 L 12 MSWR3/FZY	
		421	1MPC0302618	PAN HEAD MACHINE SCREW +	D3.0 L10.0,MSWR3/FZY	
		422	1MPC0302418	PAN HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		425	1SRF0302418	BRAIZER HD TAP TITE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +	D 3.0 L 6.0 MSWR3/FZY	
NUT, WASHER						
		503	354-020E	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		505	354-080E	WASHER	STOPPER	
		506	352-025A	NUT	NYLON M3	
		507	354-020J	WASHER	STOPPER(2.6X4.8X0.5)	
		508	352-033A	NUT	NUT NYLON(M3)	
		511	354-080C	WASHER	STOPPER	NSP
		512	354-080E	WASHER	STOPPER	NSP
		513	354-080A	WASHER	STOPPER	NSP
		514	354-080B	WASHER	STOPPER	
		516	354-033B	WASHER	STOPPER	

• Cabinet & Main Frame Section

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A43	258-677S	PANEL	ASSY FRONT	
		A44	3501R-0071A	BOARD ASSY	POWER	
		A45	3501R-0076A	BOARD ASSY	PRE-AMP(4HD)	
		A46	3501R-0070A	BOARD ASSY	MAIN	
PARTS SECTION						
		250	217-448H	CASE	TOP	
		260	315-302C	FRAME	MAIN	NSP
OR		260	315-302D	FRAME	MAIN(PAL)	NSP

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		265	477-034B	RUBBER	BUMPON	NSP
		267	246-032W	LABEL	MAIN	NSP
		268	255-151A	PLATE	SIDE GND(FTZ)	NSP
		269	321-532A	BRACKET	HOUSING	
		275	324-802A	HOLDER	DIGITRON	
		280	258-681H	PANEL	FRONT	NSP
		281	435-427B	GEAR	ASSY DAMPER(MILK)	
		282	221-964S	COVER	ASSY DOOR	
		283	226-077U	DOOR	CST	
		284	442-370A	SPRING	DOOR	
		287	524-007F	MAGNET	ASSY DOOR	
		300	681-051A	CORD	KKP-418J B-172 KLCE-2F PAL	
		301	321-421A	BRACKET	TR	
		303	255-150A	PLATE	HEAT SINK	
		304	221-407A	COVER	FUSE	
		320	258-693A	PANEL	ASSY DISTRIBUTOR	
		330	221-786A	COVER	BOTTOM	NSP
		331	255-152A	PLATE	DRUM SHIELD(FTZ)	NSP
		332	255-153A	PLATE	DECK GND (FTZ)	
		333	255-234A	PLATE	POWER GND	
SCREW						
		452	353-051A	SCREW	SPECIAL	
		462	353-136A	SCREW	SPECIAL(FBK) (353S353A)	
		463	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	

• Packing Accessory Section

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	480-477B	INSTRUCTION ASSY		
		802	290-023A	BOX CARTON	E.PS	
		803	283-239A	PACKING		NSP
		804	291-002B	SHEET CUSHION		
		808	534-008C	BATTERY	AAAM(R03) 1.5V 1PAIR(LOCAL)	
		810	861-505B	CABLE SET ASSY	RF-CABLE,ASSY,PAL	

• Remote Control Section

RUN DATE : 94.06.27
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	597-112G	REMOTE CONTROL	R/C ASSY 94PAL	
		901	221-817A	COVER	DOOR R/C	
		902	255-344A	PLATE	TOP R/C 94PAL	
		903	217-551B	CASE	TOP R/C 94PAL W/D	
		904	556-254B	SWITCH	RUBBER A R/C 94PAL	
		905	515-702E	PWB ASSY	R/C(PAL) Q3 W/DOOR	
		906	236-452A	WINDOW	FILTER	

NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		907	221-815A	COVER	BOTTOM R/C	
		908	221-816A	COVER	BATTERY	
		909	442-582B	SPRING	BATTERY 'A'	
		914	556-255A	SWITCH	RUBBER B R/C 84PAL	
		916	1TPH0202016	PAN HEAD TAPPING SCREW + 2	D 2.0 L 6.0 MSWR3(BK)	

• Fixture Section

RUN DATE : 94.06.27

NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FIX	960-015C	FIXTURE	SVC FIXTURE	
		FIX1	232-972A	BOARD ASSY	SVC FIXTURE	
		FIX2	515-973A	PWB ASSY	SVC FIXTURE-2	

• Electrical Section

RUN DATE : 94.06.27

CAUTION: The * marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

Tolerance

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 -20	+100 -10	+100 -10

CC, CJ, CK: Capacitor, Ceramic
CE: Capacitor, Electrolytic
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
CAPACITOR				
		C001	OCN1040K948	0.1M 50V Z F TA26
		C002	OCN1040K948	0.1M 50V Z F TA26
		C003	OCN1040K948	0.1M 50V Z F TA26
		C004	OCN1040K948	0.1M 50V Z F TA26
		C005	OCN1030F678	0.01M 16V M Y TA26
		C006	OCN1030F678	0.01M 16V M Y TA26
		C007	OCN1030F678	0.01M 16V M Y TA26
		C008	OCN1030F678	0.01M 16V M Y TA26
		C009	OCN1030F678	0.01M 16V M Y TA26
		C010	OCN1040K948	0.1M 50V Z F TA26
		C011	OCN1030F678	0.01M 16V M Y TA26
		C012	OCN2230H948	0.022M 25V Z F TA26
		C013	OCE4764C638	47M SRA 6.3V M FM5 TP(5)
		C014	OCN1040K948	0.1M 50V Z F TA26
		C015	OCN1040K948	0.1M 50V Z F TA26
		C016	OCC0500K015	5P 50V C NP0 TR
		C017	OCN1030F678	0.01M 16V M Y TA26
		C018	OCC3300K415	33P 50V J NP0 TP
		C019	OCN1030F678	0.01M 16V M Y TA26
		C021	OCN3310K518	330P 50V K B TA26
		C022	OCN1030F678	0.01M 16V M Y TA26
		C023	OCN1030F678	0.01M 16V M Y TA26
		C024	OCC8200K415	82P 50V J NP0 TP
		C025	OCN2230H948	0.022M 25V Z F TA26
		C026	OCE2274C638	220M SRA 6.3V M FM5 TP(5)
		C030	OCN1030F678	0.01M 16V M Y TA26
		C035	OCE4764C638	47M SRA 6.3V M FM5 TP(5)
		C036	OCN2230H948	0.022M 25V Z F TA26
		C037	OCE4764C638	47M SRA 6.3V M FM5 TP(5)
		C101	624-018A	LINE DE7100 FZ 472P VA1-KC
	OR	C101	624-018D	LINE ECKDNS4722V PAL MATSUSITA
		C102	624-018A	LINE DE7100 FZ 472P VA1-KC
	OR	C102	624-018D	LINE ECKDNS4722V PAL MATSUSITA
		C103	OCK2230K945	0.022M 50V Z F TS
		C104	OCE4786F610	4700M SMS 16V M FL
		C105	OCE4786F638	47M SMS 16V M FM5 TP5
		C106	OCE4786F638	47M SMS 16V M FM5 TP5
		C107	OCK2230K945	0.022M 50V Z F TS
		C108	OCE4786F638	47M SMS 16V M FM5 TP5
		C109	OCE1076L610	100M SMS 63V M FM5
		C110	OCE1066K638	10M SMS 50V M FM5 TP(5)
		C111	OCE1076L610	100M SMS 63V M FM5
		C112	OCK2230K945	0.022M 50V Z F TS

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C113	824-025A	4700UF-35V(23X37)
		C114	OCE4786F638	47M SMS 16V M FM5 TP5
		C115	OCE4786F638	47M SMS 16V M FM5 TP5
		C116	OCE4786F638	47M SMS 16V M FM5 TP5
		C117	OCE4786F638	47M SMS 16V M FM5 TP5
		C119	OCK2230K945	0.022M 50V Z F TS
		C120	OCK2230K945	0.022M 50V Z F TS
		C121	OCK2230K945	0.022M 50V Z F TS
		C122	OCK2230K945	0.022M 50V Z F TS
		C123	OCE4774D638	470M SRA 10V M FM5 TP(5)
		C124	OCK2230K945	0.022M 50V Z F TS
		C201	OCQ4734K409	0.047U 50V J POLY TE TP
		C202	OCE4786F638	47M SMS 16V M FM5 TP5
		C203	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C204	OCN2230H948	0.022M 25V Z F TA26
		C205	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C206	OCE1051K638	1.0U SM 50V M FM5 BP TP(D)
		C207	OCE1066K638	10M SMS 50V M FM5 TP(5)
		C208	OCE1066K638	10M SMS 50V M FM5 TP(5)
		C209	OCE1051K638	1.0U SM 50V M FM5 BP TP(D)
		C211	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C212	OCQ1821N409	0.0018U 100V J POLY TP
		C213	OCN4720F668	4700P 16V M X TA26
		C214	OCE1064F638	10M SRA 16V M FM5 TP(5)
		C215	OCE4786F638	47M SMS 16V M FM5 TP5
		C216	OCK2210K405	220P 50V J SL TP
		C217	OCC4700K415	47P 50V J NP0 TP
		C218	OCE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C220	OCN4730K948	0.047M 50V Z F TA26
		C221	OCE4746K638	0.47M SMS 50V M TP(5)
		C222	OCE4775F638	470M SR 16V M FM5 TP(5)
		C224	OCE4786F638	47M SMS 16V M FM5 TP5
		C225	OCQ4734K409	0.047U 50V J POLY TE TP
		C226	OCE4756K638	4.7M SMS 50V M FM5 TP(5)
		C227	OCE4756K638	4.7M SMS 50V M FM5 TP(5)
		C241	OCN4730K948	0.047M 50V Z F TA26
		C290	OCN1030F678	0.01M 16V M Y TA26
		C291	OCE4775F638	470M SR 16V M FM5 TP(5)
		C299	OCN1030F678	0.01M 16V M Y TA26
		C301	OCN2230H948	0.022M 25V Z F TA26
		C302	OCE2274F638	220M SRA 16V M FM5 TP(5)
		C303	OCE3368F638	33M SMS 16V M FM5 TP(5)
		C304	OCN8200K518	82PF 50V K B TA26
		C306	OCQ6831N409	0.068U 100V J POLY TP
		C307	OCX5600K408	56P 50V J SL TA26

RUN DATE : 94.06.27

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
C308		0CE1078F638	100M SMS 16V M FMS TP(5)	
C309		OCN1030F678	0.01M 16V M Y TA26	
C318		OCN1030F678	0.01M 16V M Y TA26	
C319		OCX6800K408	68P 50V J SL TA26	
C322		OCN1030F678	0.01M 16V M Y TA26	
C323		OCX2200K408	22P 50V J SL TP26	
C324		OCX2274F638	220M SRA 16V M FMS TP(5)	
C327		OCX6800K408	68P 50V J SL TA26	
C328		OCX3300K408	33P 50V J SL TA26	
C329		OCX4700K408	47P 50V J SL TA26	
C330		OCX0600K015	6P 50V CNP0 TS	
C331		OCN1030F678	0.01M 16V M Y TA26	
C332		OCX4766F638	47M SMS 16V M FMS TP5	
C333		OCX2256K638	2.2M SMS 50V M FMS TP(5)	
C334		OCN1030F678	0.01M 16V M Y TA26	
C335		OCN2230H948	0.022M 25V Z F TA26	
C337		OCN1010K518	100P 50V K B TA26	
C338		OCN1030F678	0.01M 16V M Y TA26	
C339		OCN2210K518	220P 50V K B TA26	
C342		OCN4730K948	0.047M 50V Z F TA26	
C343		OCX2200K408	22P 50V J SL TP26	
C344		OCN1030F678	0.01M 16V M Y TA26	
C346		OCQ8221N409	0.0082U 100V J POLY TP	
C347		OCN1030F678	0.01M 16V M Y TA26	
C348		OCN2230H948	0.022M 25V Z F TA26	
C349		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C350		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C351		OCX1064F638	10M SRA 16V M FMS TP(5)	
C353		OCX4775C638	470M SR 6.3V M FMS TP(5)	
C356		OCN2230H948	0.022M 25V Z F TA26	
C357		OCX4775C638	470M SR 6.3V M FMS TP(5)	
C358		OCX4766F638	47M SMS 16V M FMS TP5	
C360		OCN1030F678	0.01M 16V M Y TA26	
C361		OCX4766F638	47M SMS 16V M FMS TP5	
C363		OCX6800K408	68P 50V J SL TA26	
C364		OCX0500K015	5P 50V CNP0 TR	
C365		OCX1064F638	10M SRA 16V M FMS TP(5)	
C366		OCX1066H638	10M SMS 25V M FMS TP	
C367		OCX3348K638	0.33M SMS 50V M FMS TP(5)	
C368		OCN2230H948	0.022M 25V Z F TA26	
C369		OCQ2231N409	0.022U 100V J POLY TP	
C370		OCN1030F678	0.01M 16V M Y TA26	
C371		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C372		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C373		OCQ4734K409	0.047U 50V J POLY TE TP	
C374		OCX4710K405	470P 50V J SL TP	
C375		OCX1076F638	100M SMS 16V M FMS TP(5)	
C376		OCN2230H948	0.022M 25V Z F TA26	
C377		OCX2010K405	200P 50V J SL TS	
C378		OCX1500K408	15P 50V J SL TA26	
C379		OCX4300K405	43P 50V J SL TP	
C381		OCN1810K518	180P 50V K B TA26	
C382		OCX3910K405	390P 50V J SL TP	
C383		OCN2230H948	0.022M 25V Z F TA26	
C384		OCX4775C638	470M SR 6.3V M FMS TP(5)	
C385		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C386		OCN1030F678	0.01M 16V M Y TA26	
C387		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C388		OCN2230H948	0.022M 25V Z F TA26	
C389		OCN1040K948	0.1M 50V K B TA26	
C390		OCX4756K638	4.7M SMS 50V M FMS TP(5)	
C391		OCX6800K408	68P 50V J SL TA26	

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
C392		OCN8200K518	82PF 50V K B TA26	
C393		OCN2230H948	0.022M 25V Z F TA26	
C394		OCN2230H948	0.022M 25V Z F TA26	
C395		OCQ5631N409	0.056U 100V J POLY TP	
C397		OCX3900K408	39P 50V J SL TA26	
C398		OCN1510K518	150P 50V K B TA26	
C399		OCX3300K408	33P 50V J SL TA26	
C3A1		OCN1010K518	100P 50V K B TA26	
C3A3		OCN1040K948	0.1M 50V Z F TA26	
C3B1		OCX2256K638	2.2M SMS 50V M FMS TP(5)	
C3F1		OCX3900K408	39P 50V J SL TA26	
C401		OCN1020K518	1000P 50V K B TA26	
C402		OCX4756K638	4.7M SMS 50V M FMS TP(5)	
C403		OCN2210K518	220P 50V K B TA26	
C404		OCX3366F638	33M SMS 16V M FMS TP(5)	
C405		OCX2266F638	22M SMS 16V M FMS TP5	
C406		OCQ1031N409	0.01U 100V J POLY TP	
C407		OCX4766F638	47M SMS 16V M FMS TP5	
C408		OCQ1031N409	0.01U 100V J POLY TP	
C410		OCX4766F638	47M SMS 16V M FMS TP5	
C411		OCQ5631N409	0.056U 100V J POLY TP	
C412		OCX2246K638	0.22M SMS 50V M FMS TP(5)	
C413		OCN8220F668	8200P 16V M X TA26	
C414		OCX1066H638	10M SMS 25V M FMS TP	
C415		OCQ6821N409	0.0068U 100V J POLY TP	
C416		OCX2244K638	0.22M SRA 50V M FMS TP(5)	
C417		OCN4730K948	0.047M 50V Z F TA26	
C418		OCN4720F668	4700P 16V M X TA26	
C419		OCQ1231N409	0.012U 100V J POLY TP	
C421		OCX4756K638	4.7M SMS 50V M FMS TP(5)	
C422		OCX1066H638	10M SMS 25V M FMS TP	
C423		OCX4766F638	47M SMS 16V M FMS TP5	
C424		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C4L2		OCQ2731N409	0.027U 100V J POLY TP	
C501		OCN1030F678	0.01M 16V M Y TA26	
C502		OCX1066H638	10M SMS 25V M FMS BP TP(D)	
C503		OCN1030F678	0.01M 16V M Y TA26	
C504		OCN1030F678	0.01M 16V M Y TA26	
C505		OCN1030F678	0.01M 16V M Y TA26	
C506		OCN1030F678	0.01M 16V M Y TA26	
C507		OCN1030F678	0.01M 16V M Y TA26	
C508		OCN1030F678	0.01M 16V M Y TA26	
C509		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C510		OCX2200K415	22P 50V J NPO TS	
C511		OCX2400K415	24P 50V J NPO TP	
C512		OCN2230H948	0.022M 25V Z F TA26	
C513		OCN2230H948	0.022M 25V Z F TA26	
C514		OCX1076H638	100M SMS 25V M FMS TP5	
C515		OCX1076H638	100M SMS 25V M FMS TP5	
C516		OCN1030F678	0.01M 16V M Y TA26	
C517		OCN1030F678	0.01M 16V M Y TA26	
C518		OCX1076H638	100M SMS 25V M FMS TP5	
C519		OCX1076H638	100M SMS 25V M FMS TP5	
C520		824-027A	GOLD 0.047F-5.5V D13.0X8.5 NEC	
C521		OCX2274C638	220M SRA 6.3V M FMS TP(5)	
C522		OCN1030F678	0.01M 16V M Y TA26	
C523		OCN1020K518	1000P 50V K B TA26	
C524		OCN2230H948	0.022M 25V Z F TA26	
C526		OCX1066H638	10M SMS 25V M FMS BP TP(D)	
CSA2		OCN8200K518	82PF 50V K B TA26	
C601		OCX4766F638	47M SMS 16V M FMS TP5	
C602		OCX4766F638	47M SMS 16V M FMS TP5	

MODEL:QUI5Y 40

RUN DATE : 94.06.27

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
C603		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C604		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C605		OCX4766F638	47M SMS 16V M FMS TP5	
C606		OCX4766F638	47M SMS 16V M FMS TP5	
C607		OCX4766F638	47M SMS 16V M FMS TP5	
C611		OCX1054K638	1.0M SRA/SS50V M FMS TP(5)	
C612		OCX4775C638	470M SR 6.3V M FMS TP(5)	
C613		OCX1064F638	10M SRA 16V M FMS TP(5)	
C614		OCX1064F638	10M SRA 16V M FMS TP(5)	
C615		OCX1064F638	10M SRA 16V M FMS TP(5)	
C616		OCX1064F638	10M SRA 16V M FMS TP(5)	
C617		OCX4775C638	470M SR 6.3V M FMS TP(5)	
C618		OCX1064F638	10M SRA 16V M FMS TP(5)	
C619		OCX4756K638	4.7M SMS 50V M FMS TP(5)	
C620		OCX4766F638	47M SMS 16V M FMS TP5	
C621		OCN2230H948	0.022M 25V Z F TA26	
C622		OCN2210K518	220P 50V K B TA26	
C623		OCN2210K518	220P 50V K B TA26	
C624		OCN2210K518	220P 50V K B TA26	
C625		OCN2210K518	220P 50V K B TA26	
C626		OCX3900K408	39P 50V J SL TA26	
C701		OCN2230H948	0.022M 25V Z F TA26	
C702		OCN2230H948	0.022M 25V Z F TA26	
C703		OCX4766F638	47M SMS 16V M FMS TP5	
C704		OCN2230H948	0.022M 25V Z F TA26	
C705		OCX4775F638	470M SR 16V M FMS TP(5)	
C706		OCX1066K638	10M SMS 50V M FMS TP(5)	
C708		OCQ1041N409	0.1U 100V J POLY TP	
C709		OCQ1041N409	0.1U 100V J POLY TP	
C710		OCQ1041N409	0.1U 100V J POLY TP	
C711		OCX3348K638	0.33M SMS 50V M FMS TP(5)	
C712		OCN1030F678	0.01M 16V M Y TA26	
C713		OCX4766F638	47M SMS 16V M FMS TP5	
C714		OCN1040K948	0.1M 50V Z F TA26	
C716		OCX2210K405	220P 50V J SL TP	
C730		OCX4766F638	47M SMS 16V M FMS TP5	
C801		OCX2274F638	220M SRA 16V M FMS TP(5)	
C802		OCX1800K415	18P 50V J NPO TS	
C803		OCX2200K415	22P 50V J NPO TS	
C804		OCX2274F638	220M SRA 16V M FMS TP(5)	
C805		OCN2230H948	0.022M 25V Z F TA26	
C806		OCX4766F638	47M SMS 16V M FMS TP5	
C807		OCN2230H948	0.022M 25V Z F TA26	
C808		OCX3900K408	39P 50V J SL TA26	
C809		OCX2274F638	220M SRA 16V M FMS TP(5)	
C810		OCX0300K015	3P 50V CNP0 TS	
C811		OCX3900K415	39P 50V J NPO TP	
C812		OCN1010K518	100P 50V K B TA26	
C813		OCN1010K518	100P 50V K B TA26	
C814		OCN1010K518	100P 50V K B TA26	
C815		OCN1010K518	100P 50V K B TA26	
C816		OCN2230H948	0.022M 25V Z F TA26	
C817		OCX4766F638	47M SMS 16V M FMS TP5	
C818		OCX4766F638	47M SMS 16V M FMS TP5	
C821		OCN4710K518	470P 50V K B TA26	
C822		OCN1020K518	1000P 50V K B TA26	
C823		OCN2230H948	0.022M 25V Z F TA26	
C824		OCN2230H948	0.022M 25V Z F TA26	
C825		OCX4766F638	47M SMS 16V M FMS TP5	
C901		OCX4766F638	47M SMS 16V M FMS TP5	
C902		OCN1020K518	1000P 50V K B TA26	
C903		OCQ5621N409	0.0056U 100V J POLY TP	

MODEL:QUI5Y 40

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C904	OCQ2241N400	0.22U 100V J POLY S
		C905	OCQ4731N409	0.047U 100V J POLY TP
		C906	OCN1030F678	0.01M 16V M Y TA26
		C907	OCX4766F638	47M SMS 16V M FMS TP5
		C908	OCX4766F638	47M SMS 16V M FMS TP5
		CA02	OCX2244K638	0.22M SRA 50V M FM5 TP(5)
		CA03	OCQ2221N409	0.0022U 100V J POLY TP
		CA04	OCQ3331N409	0.033U 100V J POLY TP
		CA05	OCX1076F638	100M SMS 16V M FM5 TP(5)
		CA06	OCN2230H948	0.022M 25V Z F TA26
DIODE				
		D002	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D101	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D102	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D103	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D104	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D105	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D106	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D107	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D108	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		D109	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D110	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D111	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D112	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D113	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D114	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D201	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D202	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D203	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D204	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D205	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D209	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D210	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D211	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D301	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D302	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D303	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D305	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D501	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D502	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D503	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D504	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D505	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D507	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D508	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5G1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5G4	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5S1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5S5	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5S6	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5S9	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D601	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D602	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D701	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D702	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D801	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D802	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DA01	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM

S	AL	LOC.A.NO	PART NO(GS)	SPECIFICATION
DISPLAY TUBE				
		DG901	514-032A	9BT-123GK 85X25 PAL SEJIN
DELAY LINE				
		DL301	617-011A	MS-31PC (KSS)
FUSE				
		F101	585-011A	T 500MA 250V S504
		F102	585-011C	T 1.6A 250V S506
		F103	585-011K	T2A, 250V (BESWICK)
FILTER				
		FL101	616-004B	LINE 801-302-FD(BLUEJON)
		FL301	616-064B	L/C LPF1.5-1B(Y-0170A)S/S
		Z301	616-323A	SFE4.25MBF (MURATA)
IC				
	OR	IC001	01SA737400A	LA7374(PRE-AMP 4HEAD Y/C)
	OR	IC101	01KE780060A	KIA78006AP-KIA7806P(REG 6V 1A)
	OR	IC101	01MA780600A	AN7806 6V1AREG MATSUSHITA
	OR	IC102	01KE780060A	KIA78006AP-KIA7806P(REG 6V 1A)
	OR	IC102	01MA780600A	AN7806 6V1AREG MATSUSHITA
	OR	IC201	01IH497560A	HD49756NT(SERVVO)
	OR	IC301	01SA739000A	LA7390(PAL,Y/C1CHIP)
	OR	IC302	01RH702500A	BA7025L PAL/MESECAM SYNC DETEC
	OR	IC303	01KK740300B	MSM7403RS(2H CCD) DIP-PACK
	OR	IC401	01RH770000A	BA7790LS(AUDIO NORMAL)
	OR	IC501	01M1381840X	M38184MA-134FF(SY+T)
	OR	IC502	01GS744500A	GL7445 (MOTOR DRIV-1CH) GSS
	OR	IC503	01MT523000B	PST-523G/T(3.3V) LOW
	OR	IC504	01SM258600A	SDA2586 NVM,8K BIT
	OR	IC601	01SA715600A	LA7156 (CANAL SW)
	OR	IC701	01SA791000A	LA7910 TV BAND SELEC
	OR	IC801	01MI350100M	M35010-110SP(OSD)
	OR	IC901	01TF422100A	U4221B-A AUTO CLOCK SETTING
	OR	ICA01	01SM564900A	SDA5649 (VPS+PDC)
COIL				
		ANT901	633-054A	ANTENNA COIL (DAISHIN) 77.5KHZ
		B6F1	636-010A	BEAD,BL01RN1-A62,MURATA
		B6F2	636-010A	BEAD,BL01RN1-A62,MURATA
		L001	0LR0102J025	100UH 5% 4X5 TR5
		L002	0LR1000K035	100M K 6X6 L5 TP
		L003	0LA1800K018	180M K 2.3X3.4 L5 TP
		L004	0LR0102J025	100UH 5% 4X5 TR5
		L005	0LR0562J025	56UH 5% 4X5 TR5
		L006	0LA0332K018	33M K 2.3X3.4 L5 TP
		L045	0LA0272K018	27M K 2.3X3.4 L5 TP
		L201	0LR1000J025	100UH 5% 4X5 TR5
		L202	0LR1000J025	100UH 5% 4X5 TR5
		L301	637-013B	PECK 6.80MHZ N-YE
		L302	0LR1000J025	100UH 5% 4X5 TR5
		L304	0LA0152K018	15M K 2.3X3.4 L5 TP
		L305	0LA0332K018	33M K 2.3X3.4 L5 TP
		L306	0LA0332K018	33M K 2.3X3.4 L5 TP
		L307	0LA0471K018	47M K 2.3X3.4 L5 TP
		L308	0LR1000J025	100UH 5% 4X5 TR5
		L309	0LA0332K018	33M K 2.3X3.4 L5 TP

S	AL	LOC.A.NO	PART NO(GS)	SPECIFICATION
		L310	0LA0472K018	47M K 2.3X3.4 L5 TP
		L311	0LR2700J025	270UH 5% 4X5 TR5
		L312	0LA0822K018	82M K 2.3X3.4 L5 TP
		L313	0LA0222K018	22M K 2.3X3.4 L5 TP
		L314	0LA0332K018	33M K 2.3X3.4 L5 TP
		L315	0LR1000J025	100UH 5% 4X5 TR5
		L316	0LR1000J025	100UH 5% 4X5 TR5
		L317	0LR1000J025	100UH 5% 4X5 TR5
		L318	0LR1000J025	100UH 5% 4X5 TR5
		L319	0LR8200J025	820UH 5% 4X5 TR5
		L320	0LA0332K018	33M K 2.3X3.4 L5 TP
		L3A1	0LA0472K018	47M K 2.3X3.4 L5 TP
		L3A2	0LR1000J025	100UH 5% 4X5 TR5
		L401	0LR1000J025	100UH 5% 4X5 TR5
		L402	0LR1502J045	0.015H J 6X7 L5 TP
		L403	0LR1502J045	0.015H J 6X7 L5 TP
		L501	0LR1000J025	100UH 5% 4X5 TR5
		L502	0LR1000J025	100UH 5% 4X5 TR5
		L503	0LA1000K018	100M K 2.3X3.4 L5 TP
		L504	0LR1000J025	100UH 5% 4X5 TR5
		L505	0LA0221K018	2.2UH K 2.3X3.4 L5 TP
		L506	0LR1000J025	100UH 5% 4X5 TR5
		L601	0LR1000J025	100UH 5% 4X5 TR5
		L602	0LA1000K018	100M K 2.3X3.4 L5 TP
		L603	0LA1000K018	100M K 2.3X3.4 L5 TP
		L605	0LA1000K018	100M K 2.3X3.4 L5 TP
		L606	0LA1000K018	100M K 2.3X3.4 L5 TP
		L608	0LA1000K018	100M K 2.3X3.4 L5 TP
		L609	0LA1000K018	100M K 2.3X3.4 L5 TP
		L701	0LR1000J025	100UH 5% 4X5 TR5
		L702	0LR1000J025	100UH 5% 4X5 TR5
		L703	0LA0221K018	2.2UH K 2.3X3.4 L5 TP
		L704	0LA0222K018	22M K 2.3X3.4 L5 TP
		L705	0LA0222K018	22M K 2.3X3.4 L5 TP
		L706	0LR1000J025	100UH 5% 4X5 TR5
		L801	0LA1000K018	100M K 2.3X3.4 L5 TP
		L802	0LA1000K018	100M K 2.3X3.4 L5 TP
		L803	0LA1000K018	100M K 2.3X3.4 L5 TP
		L804	0LR1000J025	100UH 5% 4X5 TR5
		L805	0LA0332K018	33M K 2.3X3.4 L5 TP
		L806	0LA0122K018	12M K 2.3X3.4 L5 TP
		L807	0LR1000J025	100UH 5% 4X5 TR5
		L808	0LR1000J025	100UH 5% 4X5 TR5
		L901	0LR1000K035	100M K 6X6 L5 TP
		L902	0LR1000K035	100M K 6X6 L5 TP
		LA01	0LR1000J025	100UH 5% 4X5 TR5
		T401	633-032C	BIAS-OSC(MISUMI) 70KHZ
LED				
		LD901	0DL112000AJ	DL-11S2RNS(SUPER,RED,03)KOC
CIRCUIT BOARD ASSEMBLY				
		PBJT0	515-700B	JUNCTION 2 D-17S
		PBM00	6871R-0070A	MAIN
		PBP00	6871R-0071A	POWER
		PBPR0	6871R-0074A	PREMIERE/VPS/PDC
		PBT00	6871R-0073A	TIMER/ACSS
		PBY00	6871R-0075A	Y/C-SUB
TRANSFORMER				

S	AL	LOC.A.NO	PART NO(GS)	SPECIFICATION
	OR	PT101	641-042B	120V/230V/240V/50HZ
	OR	PT101	641-342B	120V/230V/240V/50HZ
TRANSISTOR				
	OR	Q001	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q002	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q003	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q004	0TR126709AC	KTA1267-GR MINI TP KEC
	OR	Q005	0TR103009AF	KRA103M-TP (KRA2203) KEC
	OR	Q006	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q101	0TR141400AA	KTD1414 POWER (220 PACK) KEC
	OR	Q101	0TR239900AA	2SD2399(R) POWER ROHM
	OR	Q102	0TR141400AA	KTD1414 POWER (220 PACK) KEC
	OR	Q102	0TR239900AA	2SD2399(R) POWER ROHM
	OR	Q103	0TR103009AF	KRA103M-TP (KRA2203) KEC
	OR	Q104	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
	OR	Q105	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q106	0TR126709AC	KTA1267-GR MINI TP KEC
	OR	Q201	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q202	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q203	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q204	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q205	0TR319809AE	KRC103M-TP (KRC1203) KEC
	OR	Q206	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q207	0TR103009AF	KRA103M-TP (KRA2203) KEC
	OR	Q208	0TR103009AF	KRA103M-TP (KRA2203) KEC
	OR	Q209	0TR103009AF	KRA103M-TP (KRA2203) KEC
	OR	Q301	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q305	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q306	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q307	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q308	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q309	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q310	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q312	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q313	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q314	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q315	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q316	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q317	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q318	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q319	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q321	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q381	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q401	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
	OR	Q402	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q403	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
	OR	Q404	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q405	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q501	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q502	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q503	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q504	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q601	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
	OR	Q604	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
	OR	Q605	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q701	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
	OR	Q702	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q703	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q704	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
	OR	Q705	0TR103009AE	KRC103M-TP (KRC1203) KEC
	OR	Q706	0TR103009AF	KRA103M-TP (KRA2203) KEC

S	AL	LOC.A.NO	PART NO(GS)	SPECIFICATION
		Q707	0TR117009AA	FET KTK117A(Y,GR) TP KEC
		Q720	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q721	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q801	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q802	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q803	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q804	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q805	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q806	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q810	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q901	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q902	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
RESISTOR				
		R001	0RD2202F608	22K 1/6W 5 TA26
		R002	0RD2202F608	22K 1/6W 5 TA26
		R003	0RD6801F608	6.8K 1/6W 5 TA26
		R004	0RD6801F608	6.8K 1/6W 5 TA26
		R005	0RD1001F608	1.0K 1/6W 5 TA26
		R006	0RD1001F608	1.0K 1/6W 5 TA26
		R007	0RD2202F608	22K 1/6W 5 TA26
		R008	0RD2202F608	22K 1/6W 5 TA26
		R009	0RD1001F608	1.0K 1/6W 5 TA26
		R010	0RD2201F608	2.2K 1/6W 5 TA26
		R011	0RD2201F608	2.2K 1/6W 5 TA26
		R012	0RD3900F608	390 1/6W 5 TA26
		R013	0RD1201F608	1.2K 1/6W 5 TA26
		R014	0RD3900F608	390 1/6W 5 TA26
		R015	0RD5601F608	5.6K 1/6W 5 TA26
		R016	0RD2201F608	2.2K 1/6W 5 TA26
		R017	0RD1001F608	1.0K 1/6W 5 TA26
		R018	0RD1801F608	1.8K 1/6W 5 TA26
		R019	0RD5600F608	560 1/6W 5 TA26
		R020	0RD1201F608	1.2K 1/6W 5 TA26
		R021	0RD3901F608	3.9K 1/6W 5 TA26
		R022	0RD2201F608	2.2K 1/6W 5 TA26
		R023	0RD3302F608	33K 1/

RUN DATE : 94.06.27

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R214	ORD6802F608	68K 1/6W 5 TA26
		R215	ORD5603F608	560K 1/6W 5 TA26
		R216	ORD6803F608	680K 1/6W 5 TA26
		R217	ORD2702F608	27K 1/6W 5 TA26
		R218	ORD2701F608	2.7K 1/6W 5 TA26
		R219	ORD1501F608	1.5K 1/6W 5 TA26
		R220	ORD8201F608	8.2K 1/6W 5 TA26
		R221	ORD1502F608	15K 1/6W 5 TA26
		R222	ORD8202F608	82K 1/6W 5 TA26
		R223	ORD2702F608	27K 1/6W 5 TA26
		R224	ORD4702F608	47K 1/6W 5 TA26
		R225	ORD1003F608	100K 1/6W 5 TA26
		R226	ORD1003F608	100K 1/6W 5 TA26
		R227	ORD5601F608	5.6K 1/6W 5 TA26
		R228	ORD1202F608	12K 1/6W 5 TA26
		R229	ORD3902F608	39K 1/6W 5 TA26
		R230	ORD5601F608	5.6K 1/6W 5 TA26
		R231	ORD4700F608	470 1/6W 5 TA26
		R232	ORD4700F608	470 1/6W 5 TA26
		R233	ORD4700F608	470 1/6W 5 TA26
		R234	ORD1202F608	12K 1/6W 5 TA26
		R235	ORD1004F608	1.0M 1/6W 5 TA26
		R236	ORD2203F608	220K 1/6W 5 TA26
		R237	ORD6801F608	6.8K 1/6W 5 TA26
		R238	ORD8203F608	820K 1/6W 5 TA26
		R239	ORD5601F608	5.6K 1/6W 5 TA26
		R240	ORD4701F608	4.7K 1/6W 5 TA26
		R241	ORD5602F608	56K 1/6W 5 TA26
		R242	ORD1002F608	10K 1/6W 5 TA26
		R290	ORD3301F608	3.3K 1/6W 5 TA26
		R291	ORD0101F608	1.0 1/6W 5 TA26
		R292	ORD0101F608	1.0 1/6W 5 TA26
		R293	ORD1001F608	1.0K 1/6W 5 TA26
		R294	ORD1001F608	1.0K 1/6W 5 TA26
		R299	ORD1001F608	1.0K 1/6W 5 TA26
		R301	ORD0222F608	22 1/6W 5 TA26
		R302	ORD2201F608	2.2K 1/6W 5 TA26
		R303	ORD1503F608	150K 1/6W 5 TA26
		R304	ORD4701F608	4.7K 1/6W 5 TA26
		R305	ORD2202F608	22K 1/6W 5 TA26
		R306	ORD1001F608	1.0K 1/6W 5 TA26
		R307	ORD2202F608	22K 1/6W 5 TA26
		R308	ORD4700F608	470 1/6W 5 TA26
		R312	ORD1201F608	1.2K 1/6W 5 TA26
		R318	ORD1501F608	1.5K 1/6W 5 TA26
		R319	ORD1001F608	1.0K 1/6W 5 TA26
		R320	ORD4701F608	4.7K 1/6W 5 TA26
		R321	ORD1802F608	18K 1/6W 5 TA26
		R322	ORD2201F608	2.2K 1/6W 5 TA26
		R323	ORD1002F608	10K 1/6W 5 TA26
		R324	ORD1001F608	1.0K 1/6W 5 TA26
		R327	ORD2700F608	270 1/6W 5 TA26
		R328	ORD8200F608	820 1/6W 5 TA26
		R330	ORD2201F608	2.2K 1/6W 5 TA26
		R331	ORD6801F608	6.8K 1/6W 5 TA26
		R332	ORD1001F608	1.0K 1/6W 5 TA26
		R335	ORD1202F608	12K 1/6W 5 TA26
		R336	ORD3302F608	33K 1/6W 5 TA26
		R338	ORD4701F608	4.7K 1/6W 5 TA26
		R339	ORD3901F608	3.9K 1/6W 5 TA26
		R340	ORD2701F608	2.7K 1/6W 5 TA26
		R341	ORD6800F608	680 1/6W 5 TA26
		R342	ORD6800F608	680 1/6W 5 TA26
		R343	ORD1004F608	1.0M 1/6W 5 TA26
		R344	ORD8201F608	8.2K 1/6W 5 TA26
		R345	ORD1201F608	1.2K 1/6W 5 TA26
		R347	ORD1201F608	1.2K 1/6W 5 TA26
		R348	ORD4701F608	4.7K 1/6W 5 TA26
		R349	ORD1001F608	1.0K 1/6W 5 TA26
		R350	ORD3302F608	33K 1/6W 5 TA26
		R351	ORD1002F608	10K 1/6W 5 TA26
		R352	ORD4701F608	4.7K 1/6W 5 TA26
		R355	ORD1001F608	1.0K 1/6W 5 TA26
		R366	ORD1001F608	1.0K 1/6W 5 TA26
		R367	ORD3302F608	33K 1/6W 5 TA26
		R368	ORD1202F608	12K 1/6W 5 TA26
		R369	ORD1801F608	1.8K 1/6W 5 TA26
		R370	ORD5600F608	560 1/6W 5 TA26
		R371	ORD1001F608	1.0K 1/6W 5 TA26
		R372	ORD1501F608	1.5K 1/6W 5 TA26
		R373	ORD4700F608	470 1/6W 5 TA26
		R374	ORD4701F608	4.7K 1/6W 5 TA26
		R388	ORD1002F608	10K 1/6W 5 TA26
		R389	ORD1002F608	10K 1/6W 5 TA26
		R393	ORD2201F608	2.2K 1/6W 5 TA26
		R394	ORD2201F608	2.2K 1/6W 5 TA26
		R395	ORD1002F608	10K 1/6W 5 TA26
		R396	ORD2202F608	22K 1/6W 5 TA26
		R397	ORD1800F608	180 1/6W 5 TA26
		R398	ORD1002F608	10K 1/6W 5 TA26
		R399	ORD2202F608	22K 1/6W 5 TA26
		R3A1	ORD8200F608	820 1/6W 5 TA26
		R3A2	ORD1000F608	100 1/6W 5 TA26
		R3B1	ORD1002F608	10K 1/6W 5 TA26
		R3B2	ORD1001F608	1.0K 1/6W 5 TA26
		R3M1	ORD6801F608	6.8K 1/6W 5 TA26
		R401	ORD0102F608	10 1/6W 5 TA26
		R402	ORD0472F608	47 1/6W 5 TA26
		R403	ORD2702F608	27K 1/6W 5 TA26
		R404	ORD1500F608	150 1/6W 5 TA26
		R405	ORD2702F608	27K 1/6W 5 TA26
		R406	ORD3303F608	330K 1/6W 5 TA26
		R407	ORD1202F608	12K 1/6W 5 TA26
		R409	ORD0102F608	10 1/6W 5 TA26
		R410	ORD2701F608	2.7K 1/6W 5 TA26
		R411	ORD0102F608	10 1/6W 5 TA26
		R412	ORD5600F608	560 1/6W 5 TA26
		R413	ORD1202F608	12K 1/6W 5 TA26
		R414	ORD1004F608	1.0M 1/6W 5 TA26
		R415	ORD4701F608	4.7K 1/6W 5 TA26
		R416	ORD2201F608	2.2K 1/6W 5 TA26
		R417	ORD6801F608	6.8K 1/6W 5 TA26
		R418	ORD3902F608	39K 1/6W 5 TA26
		R419	ORD5600F608	560 1/6W 5 TA26
		R420	ORD1201F608	1.2K 1/6W 5 TA26
		R421	ORD1502F608	15K 1/6W 5 TA26
		R422	ORD5601F608	5.6K 1/6W 5 TA26
		R423	ORD5601F608	5.6K 1/6W 5 TA26
		R424	ORD1501F608	1.5K 1/6W 5 TA26
		R425	ORD3301F608	3.3K 1/6W 5 TA26
		R426	ORD1001F608	1.0K 1/6W 5 TA26
		R427	ORD3901F608	3.9K 1/6W 5 TA26
		R428	ORD4701F608	4.7K 1/6W 5 TA26
		R4L1	ORD6801F608	6.8K 1/6W 5 TA26

RUN DATE : 94.06.27

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R4L2	ORD5600F608	560 1/6W 5 TA26
		R501	614-011B	PRW 3.3/2W 10MM FORM/BULK SUNG
		R502	ORD1003F608	100K 1/6W 5 TA26
		R503	ORD1003F608	100K 1/6W 5 TA26
		R504	ORD1003F608	100K 1/6W 5 TA26
		R505	ORD4701F608	4.7K 1/6W 5 TA26
		R506	ORD4701F608	4.7K 1/6W 5 TA26
		R507	ORD5602F608	56K 1/6W 5 TA26
		R508	ORD1202F608	12K 1/6W 5 TA26
		R509	ORD4701F608	4.7K 1/6W 5 TA26
		R510	ORD1003F608	100K 1/6W 5 TA26
		R511	ORD1003F608	100K 1/6W 5 TA26
		R512	ORD4701F608	4.7K 1/6W 5 TA26
		R513	ORD4701F608	4.7K 1/6W 5 TA26
		R514	ORD4701F608	4.7K 1/6W 5 TA26
		R515	ORD4701F608	4.7K 1/6W 5 TA26
		R516	ORD4701F608	4.7K 1/6W 5 TA26
		R517	ORD4701F608	4.7K 1/6W 5 TA26
		R518	ORD4701F608	4.7K 1/6W 5 TA26
		R519	ORD2702F608	27K 1/6W 5 TA26
		R520	ORD2702F608	27K 1/6W 5 TA26
		R521	ORD4701F608	4.7K 1/6W 5 TA26
		R522	ORD4701F608	4.7K 1/6W 5 TA26
		R523	ORD1802F608	18K 1/6W 5 TA26
		R524	ORD1802F608	18K 1/6W 5 TA26
		R525	ORD4704F608	4.7M 1/6W 5 TA26
		R526	ORD1003F608	100K 1/6W 5 TA26
		R527	ORD1004F608	1.0M 1/6W 5 TA26
		R528	ORD4701F608	4.7K 1/6W 5 TA26
		R529	ORD4701F608	4.7K 1/6W 5 TA26
		R530	ORD4701F608	4.7K 1/6W 5 TA26
		R531	ORD4701F608	4.7K 1/6W 5 TA26
		R532	ORD2201F608	2.2K 1/6W 5 TA26
		R533	ORD2201F608	2.2K 1/6W 5 TA26
		R534	ORD6801F608	6.8K 1/6W 5 TA26
		R535	ORD1502F608	15K 1/6W 5 TA26
		R536	ORD3300F608	330 1/6W 5 TA26
		R537	ORD3300F608	330 1/6W 5 TA26
		R538	ORD2202F608	22K 1/6W 5 TA26
		R539	ORD1003F608	100K 1/6W 5 TA26
		R540	ORD4701F608	4.7K 1/6W 5 TA26
		R541	ORD0271F608	2.7 1/6W 5 TA26
		R542	ORD0271F608	2.7 1/6W 5 TA26
		R543	ORD1002F608	10K 1/6W 5 TA26
		R544	ORD1001F608	1.0K 1/6W 5 TA26
		R545	ORD1001F608	1.0K 1/6W 5 TA26
		R546	ORD1003F608	100K 1/6W 5 TA26
		R547	ORD4701F608	4.7K 1/6W 5 TA26
		R548	ORD4701F608	4.7K 1/6W 5 TA26
		R549	ORD1001F608	1.0K 1/6W 5 TA26
		R550	ORD1003F608	100K 1/6W 5 TA26
		R551	ORD1003F608	100K 1/6W 5 TA26
		R552	ORD1003F608	100K 1/6W 5 TA26
		R553	ORD1003F608	100K 1/6W 5 TA26
		R554	ORD1003F608	100K 1/6W 5 TA26
		R555	ORD1001F608	1.0K 1/6W 5 TA26
		R601	ORD5600F608	560 1/6W 5 TA26
		R603	ORD0752F608	75 1/6W 5 TA26
		R604	ORD1002F608	10K 1/6W 5 TA26
		R605	ORD1002F608	10K 1/6W 5 TA26
		R609	ORD1002F608	10K 1/6W 5 TA26
		R610	ORD1002F608	10K 1/6W 5 TA26
		R614	ORD1002F608	10K 1/6W 5 TA26
		R615	ORD1002F608	10K 1/6W 5 TA26
		R616	ORD0682F608	68 1/6W 5 TA26
		R617	ORD0682F608	68 1/6W 5 TA26
		R620	ORD0752F608	75 1/6W 5 TA26
		R631	ORD2200F608	220 1/6W 5 TA26
		R632	ORD2200F608	220 1/6W 5 TA26
		R633	ORD2201F608	2.2K 1/6W 5 TA26
		R634	ORD2201F608	2.2K 1/6W 5 TA26
		R635	ORD1002F608	10K 1/6W 5 TA26
		R636	ORD3902F608	39K 1/6W 5 TA26
		R660	ORD4700F608	470 1/6W 5 TA26
		R661	ORD4700F608	470 1/6W 5 TA26
		R701	ORD1002F608	10K 1/6W 5 TA26
		R702	ORD2201F608	2.2K 1/6W 5 TA26
		R703	ORD1202F608	12K 1/6W 5 TA26
		R704	ORD1002F608	10K 1/6W 5 TA26
		R705	ORD1002F608	10K 1/6W 5 TA26
		R706	ORD1202F608	12K 1/6W 5 TA26
		R707	ORD1202F608	12K 1/6W 5 TA26
		R708	ORD1202F608	12K 1/6W 5 TA26
		R709	ORD6801F608	6.8K 1/6W 5 TA26
		R710	ORD6801F608	6.8K 1/6W 5 TA26
		R711	ORD1002F608	10K 1/6W 5 TA26
		R712	ORD5601F608	5.6K 1/6W 5 TA26
		R713	ORD3301F608	3.3K 1/6W 5 TA26
		R714	ORD1001F608	1.0K 1/6W 5 TA26
		R715	ORD8203F608	820K 1/6W 5 TA26
		R722	ORD2201F608	2.2K 1/6W 5 TA26
		R723	ORD2201F608	2.2K 1/6W 5 TA26
		R733	ORD2203F608	220K 1/6W 5 TA26
		R801	ORD1500F608	150 1/6W 5 TA26
		R802	ORD1500F608	150 1/6W 5 TA26
		R803	ORD5601F608	5.6K 1/6W 5 TA26
		R804	ORD3302F608	33K 1/6W 5 TA26
		R805	ORD3900F608	390 1/6W 5 TA26
		R806	ORD1802F608	18K 1/6W 5 TA26
		R807	ORD6802F608	68K 1/6W 5 TA26
		R808	ORD3301F608	3.3K 1/6W 5 TA26
		R809	ORD1001F608	1.0K 1/6W 5 TA26
		R810	ORD2201F608	2.2K 1/6

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R914	0RD2202F608	22K 1/5W 5 TA26
		R915	0RD2202F608	22K 1/5W 5 TA26
		R916	0RD4701F608	4.7K 1/5W 5 TA26
		R917	0RD4701F608	4.7K 1/5W 5 TA26
		R9D1	0RD5601F608	5.6K 1/5W 5 TA26
		R9D2	0RD5601F608	5.6K 1/5W 5 TA26
		R9D3	0RD5601F608	5.6K 1/5W 5 TA26
		R9D4	0RD5601F608	5.6K 1/5W 5 TA26
		R9D5	0RD5601F608	5.6K 1/5W 5 TA26
		R9D6	0RD5601F608	5.6K 1/5W 5 TA26
		RA03	0RD1004F608	1.0M 1/5W 5 TA26
		RA04	0RD3301F608	3.3K 1/5W 5 TA26
		RA05	0RD1003F608	100K 1/5W 5 TA26
		RA06	0RD6801F608	6.8K 1/5W 5 TA26
		RA07	0RD1204F608	1.2M 1/5W 5 TA26
		RA08	0RD6801F608	6.8K 1/5W 5 TA26
		RA09	0RD1204F608	1.2M 1/5W 5 TA26
REMOCON RECEIVER				
		R/C901	668-226S	R/C REC(GL3276)H-25MM MESH KTC
SCART				
		JK601	573-006C	RGB SOKET SR-21S3 21PIN (BK)
		JK602	573-006D	RGB (BLUE)
SWITCH				
		SW901	556-032S	KPT-1105A
		SW902	556-032S	KPT-1105A
		SW903	556-032S	KPT-1105A
		SW904	556-032S	KPT-1105A
		SW905	556-032S	KPT-1105A
		SW906	556-032S	KPT-1105A
	OR	SW907	556-032A	SKHH 10902A
		SW907	556-032S	KPT-1105A
	OR	SW908	556-032A	SKHH 10902A
		SW908	556-032S	KPT-1105A
	OR	SW909	556-032A	SKHH 10902A
		SW909	556-032S	KPT-1105A
TUNER				
*		TU701	521-408A	B/G 31N1 ENG-57504N MATHUSHITA
VARIABLE RESISTOR				
		VR201	613-032U	RH0638C15ROWA (100K)
		VR301	613-032N	RH0638C14R14A (10K)
		VR302	613-032Q	RH0638CJ4ROWA (22K)
		VR303	613-032N	RH0638C14R14A (10K)
		VR304	613-032G	RH0638C13ROWA (1K)
		VR305	613-032Q	RH0638CJ4ROWA (22K)
		VR401	613-032U	RH0638C15ROWA (100K)
CRYSTAL				
		X302	529-020P	4.433619MHZ 15PPM GRAY L=4.0
		X501	529-001B	32.768KHZ NDK
	OR	X501	529-001D	32.768KHZ(2X6) SEIKO
		X801	529-022H	17.734476MHZ CL=16P 20PPM 4.0
		X901	529-001F	77.503KHZ 2°6 CITIZEN

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
RESONATOR				
		X502	618-017A	FCR6.0MCT2 TDK-J(TAPING)
ZENER DIODE				
		ZD101	0DZ820009AA	MTZ8.2B TP ROHM-K
		ZD103	0DZ330009AF	MTZ33B,TP,ROHM-K
		ZD104	0DZ130009AC	MTZ13B TP ROHM-K
		ZD105	0DZ150009BA	MTZ15A TP ROHM-K
		ZD401	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD501	0DZ820009BB	UZ8.2BSC 5MM TP UNIZON
		ZD502	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD601	0DZ150009BC	MTZ15B ROHM-K
		ZD602	0DZ150009BC	MTZ15B ROHM-K
		ZD603	0DZ150009BC	MTZ15B ROHM-K
		ZD604	0DZ150009BC	MTZ15B ROHM-K
		ZD605	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD701	0INE574000A	UPC574J 30V ZENER